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MARINE CORPS

INDIVIDUAL TRAINING STANDARDS (ITS) SYSTEM
OCCUPATIONAL FIELD 03, INFANTRY



BATTLE DRILL GUIDE

AND

INDIVIDUAL TRAINING PACKAGES (MCO 1510.35A)

MARINE CORPS INSTITUTE
MARINE BARRACKS
WASHINGTON, D. C.

INDIVIDUAL TRAINING STANDARDS (ITS) SYSTEM

OCCUPATIONAL FIELD (03), INFANTRY



**BATTLE DRILL GUIDE
AND
INDIVIDUAL TRAINING PACKAGES
(MCO 1510.35A)**



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**UNIVERSITY OF ILLINOIS
AT URBANA CHAMPAIGN**

PREFACE

PURPOSE

This guide focuses on the "how-to" for planning and conducting individual and unit training for Infantry Squads, Platoons, and Companies. Procedures outlined in the guide will provide the necessary preparation for units to be evaluated under the Marine Corps Combat Readiness Evaluation System (MCCRES).

SCOPE

The Battle Drill Guide is divided into the following parts:

PART I - FUNDAMENTALS OF BATTLE DRILL TRAINING

This part provides information on how to design, develop, and evaluate individual and unit training programs, to include planning procedures for conducting training.

PART II - BATTLE DRILLS

This part lists Battle Drills that link individual and leader tasks into coordinated unit actions. The drills are organized according to functional mission areas that focus on Individual Training Standards as well as unit actions. This emphasis allows leaders to develop and execute realistic training programs that build individual skills while supporting operational missions.

PART III - JOB AIDS

Each aid provides conditions, standards, and performance steps necessary for executing and evaluating Individual Training Standards (tasks) essential to Infantry operational missions. Each Job Aid also includes a cross-reference which links each task with related battle drills.

NOTE: All tasks listed in bold type in Part II are supported by a Job Aid.

CHANGES

Suggestions for improving this manual should specify changes/comments/recommendations as related to a specific part, procedure, and/or requirement as appropriate. Each suggestion should address the following elements:

- o Item to be changed (alphanumeric identification)
- o Comment
- o Recommendation(s)

Suggestions should be submitted to the Director, Marine Corps Institute, Special Programs Department, Marine Barracks, Arlington, VA 22222-0001, Autovon 288-2672 or commercial (202) 433-2672.

TABLE OF CONTENTS

	Para.	Page
Preface		i
Table of Contents		ii

PART I. FUNDAMENTALS OF BATTLE DRILL TRAINING

Section I. GENERAL

Scope	1-1	1
Introduction to Job Aids	1-2	2
Introduction to Battle Drills	1-3	3
Differences Between Performance-Oriented Training and Conventional Training	1-4	4

Section II. DESIGN/DEVELOP THE TRAINING PROGRAM

General	2-1	5
Begin Planning (Analyze)	2-2	5
Arrange and Make Selection of Drills/Tasks	2-3	6
Complete The Plans	2-4	8

Section III. ISSUE THE ORDER

Initial Training	3-1	11
Proficiency Training	3-2	12
Sustainment Training	3-3	12

Section IV. SUPERVISE

General	4-1	13
Evaluation Tools	4-2	13
Evaluation Procedures	4-3	16

Section V. ANALYZE PERFORMANCE EVALUATION

General	5-1	16
Analyzing Individual Performance (CHART A)	5-2	18
Analyzing Unit Performance (CHART B)	5-3	21

PART II. BATTLE DRILLS

Section I. GENERAL	Page
Movement Conditions	25
Environmental Conditions	27
Range/Maneuver Areas	37
Training Support Equipment/Ammunition	43
Section II. PREPARE	
Drill 1: Prepare For Combat Operations	50
Section III. MOVE	
Drill 2: Conduct Movement Techniques	52
Drill 3: Establish An Enroute Rally Point	53
Drill 4: React To Indirect Fire	54
Drill 5: Establish A Hasty Fighting Position	55
Drill 6: Cross A Danger Area (Linear, Open)	56
Drill 7: React To Ambush	59
Drill 8: Conduct A Hasty Ambush	60
Drill 9: React To Air Attack	62
Drill 10: Establish An Objective Rally Point (ORP)	64
Drill 11: Conduct Reconnaissance Of An Objective	65
Drill 12: Conduct Zone Reconnaissance	69
Drill 13: Conduct Tunnel Reconnaissance	71
Drill 14: Conduct Passage Of Friendly Lines	72
Drill 15: Break Contact	74
Section IV. SHOOT	
Drill 16: Acquire Targets And Distribute Fire	75
Drill 17: Conduct Fire And Movement	77
Drill 18: Offensive Actions At The Objective	79
Drill 19: Conduct A Point Ambush	81
Drill 20: Conduct Antiarmor Ambush	83
Drill 21: Knock Out A Bunker	85
Drill 22: Clear A Trench Line	86
Drill 23: Conduct Initial Breach Of A Mined Wire Obstacle	88
Drill 24: Breach A Mined Wire Obstacle	90
Drill 25: Breach A Minefield	91
Drill 26: Clear A Building	94

Section V. DEFEND	Page
Drill 27: Consolidate And Reorganize	95
Drill 28: Occupy, Prepare, And Defend A Defensive Position	97
Drill 29: Establish A Patrol Base	103
Drill 30: Occupy/Prepare Defensive Position (MOUT)	105
 PART III. JOB AIDS	
 Section I. GENERAL	107
Index: Job Aids	108
Job Aids for Individual Training Standards (TASKS)	112

PART I
FUNDAMENTALS OF BATTLE DRILL TRAINING

FUNDAMENTALS OF BATTLE DRILL TRAINING

Section I. GENERAL

1-1. SCOPE

The Marine Corps, being a Force in Readiness, must be prepared to be the “First To Fight.” We cannot accurately foresee the time or place of that battle, but we must expect to face a well-armed enemy, superior in number. We cannot count on either a long mobilization or a lengthy war. Rather, we must prepare ourselves for early, costly, intense combat in which penalties for “Poor Training” will result in high casualties and defeat! Training must provide for readiness in peace time and rapid mobilization in the event of war. The effectiveness of our training will determine the outcome of the war. Each of us, from the fire team leader through battalion commander, has a moral and professional obligation to continuously upgrade and add to our war fighting skills. The ultimate in being a Marine is leading other Marines in battle. Therefore, our moral obligation is to lead them well and WIN!

This Battle Drill Guide is designed to provide the leader with a practical tool for developing individual and unit proficiency required to execute operational missions. It, therefore, serves as the basis for training as well as evaluation.

The Marine Corps must train continuously to develop and maintain combat-ready Marines and units that can perform assigned missions. Training builds self-confidence, promotes teamwork and esprit de corps, and develops professionalism in leaders.

Training fundamentals apply at every echelon of command. Individual training develops technical proficiency of Marines and leaders. Collective training builds on individual skills and provides the basis for unit proficiency in executing wartime missions. The Battle Drill Guide is based on a **building block process** which emphasizes development of individual skills as initial training, with *Situational Training Exercises* (STXs) and *Field Training Exercises* (FTXs) providing opportunities to practice these skills as a part of a team, performing at gradually increased levels of difficulty. This approach will aid leaders in ensuring that individual tasks are mastered before collective training is attempted.

Individual Marine training focuses on mastery of mission-essential skills and tasks using these methods and programs:

- o SUSTAINMENT TRAINING - The repetitive execution of essential tasks throughout the unit training program based on the difficulty of tasks, personnel turnover, and evaluation results.
- o TRAIN-UP TRAINING - Training that prepares Marines to perform tasks at a higher level of responsibility once they become proficient in their basic MOS tasks.
- o CROSS-TRAINING - Used to train Marines to do other jobs and within the team.
- o MANAGED ON-THE-JOB TRAINING - May be used to complete individual training, to sustain skills, to cross-train, or to train personnel for additional duties.

1-2. INTRODUCTION TO INDIVIDUAL TRAINING PACKAGES (JOB AIDS)

The Individual Training Standards as established in MCO 1510.35A have been developed to ensure that all Marines who have the same job are taught the same individual skills required to perform the job. The Marine Corps Institute has developed Individual Training Packages (Job Aids), contained in Part III of this Guide, to provide you and your subordinates with a practical means for practicing individual skills to standard. The following is one example of an Individual Training Package (Job Aid):

The Job Aids are divided into five components:

- o **TASK:** Describes *what* a Marine must be able to do in combat.
- o **CONDITIONS:** Describe equipment, assistance, location, environmental considerations, etc., necessary to perform the task.
- o **STANDARD:** Describes how well the behavior must be performed.
- o **BATTLE DRILL(S):** Provide(s) situational condition(s) under which the task will be performed.
- o **PERFORMANCE STEPS:** Provide a logical sequence for executing the task.

NOTE: These steps do not need to be followed sequentially unless so stated in the standard.

TASK: INSTALL AND FIRE OR RECOVER M18A1 CLAYMORE MINE (G-0300-9-1/PV T)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: an M-7 handloader containing an M18A1 claymore mine (inert), M57 firing device, M40 test set and firing wire with blasting cap (inert).

STANDARD: The mine will be installed and recovered according to performance steps, with the mine and firing wire camouflaged so it is nondetectable by the observer.

BATTLE DRILL(S): 11 through 14, 28

PERFORMANCE STEPS:

A. Test circuit to ensure it is functioning:

WARNING: During installation, the M57 firing device must be kept by the Marine installing the mine to prevent accidental firing by another Marine.

- 1 Remove dust cover from test set and firing device, then plug test set into firing device
- 2 Position firing device safety bail at the FIRE position
- 3 Squeeze the handle on the firing device
- 4 Watch window of the test set for a flash of light which indicates that the firing device and test set are functioning properly

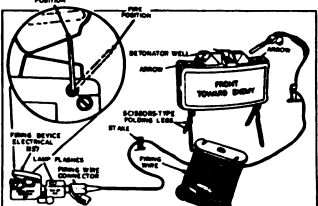


Figure 1-1. Job Aid (Sample).

To ensure that individuals perform tasks to standard, **leaders must be able to set the example by demonstrating standards** required for the selected tasks. Job aids may, therefore, be used not only as a means of evaluating individual proficiencies, but also to provide leaders with *refresher* training before they conduct individual and unit training.

1-3. INTRODUCTION TO BATTLE DRILLS

The battle drills in this guide have been organized into functional mission areas (PREPARE, MOVE, SHOOT, DEFEND) that emphasize related Individual Training Standards (ITS):

PREPARE

Drill 1 Prepare for Combat Operations

MOVE

Drill 2 Conduct Movement Techniques

Drill 3 Establish an Enroute Rally Point

Drill 4 React to Indirect Fire

Drill 5 Establish a Hasty Fighting Position

Drill 6 Cross a Danger Area

Drill 7 React to Ambush

Drill 8 Conduct a Hasty Ambush

Drill 9 React to Air Attack

Drill 10 Establish an Objective Rally Point

Drill 11 Conduct Reconnaissance of an Objective

Drill 12 Conduct Zone Reconnaissance

Drill 13 Conduct Tunnel Reconnaissance

Drill 14 Conduct Passage of Friendly Lines

Drill 15 Break Contact

SHOOT

Drill 16 Acquire Targets and Distribute Fire

Drill 17 Conduct Fire and Movement

Drill 18 Offensive Actions at the Objective

Drill 19 Conduct a Point Ambush

Drill 20 Conduct Antiarmor ambush

Drill 21 Knock Out a Bunker

Drill 22 Clear a Trench Line

Drill 23 Conduct Initial Breach of a Mined Wire Obstacle

Drill 24 Breach a Mined Wire Obstacle

Drill 25 Breach a Minefield

Drill 26 Clear a Building

DEFEND

Drill 27 Consolidate and Reorganize

Drill 28 Occupy, Prepare, and Defend a Defensive Position

Drill 29 Establish a Patrol Base

Drill 30 Occupy/Prepare Defensive Position (MOUT)

Battle drill training prepares Marines to perform those team or unit tasks essential to the accomplishment of the unit's operational mission.

Battle drills identify leader and individual Marine tasks which must be mastered prior to execution of a selected battle drill by the entire unit. To use training time effectively and efficiently, training should be organized so that leaders and individual Marines practice their required tasks separately but simultaneously.

Platoon commanders must ensure that squad leaders are proficient in the individual tasks identified in the selected battle drills. Squad leaders, in turn, must ensure that fire team leaders are proficient in these tasks. Fire team leaders can then train their team members.

Each battle drill (as outlined in this guide) will list those basic procedures that your unit will need to develop realistic training exercises.

Each Battle Drill has the following parts:

- o **DRILL NUMBER AND TITLE:** A specific statement of the unit task covered.
- o **UNIT:** Squad or platoon
- o **INDIVIDUAL TRAINING STANDARDS/TASK NUMBER:** Identifies Individual Training Standards/Tasks that will be mastered to support the Battle Drill.
- o **ACTIONS:** A listing of steps that must be performed to complete a particular drill.

SAMPLE: BATTLE DRILL

DRILL 19: CONDUCT A POINT AMBUSH

UNIT: PLATOON

INDIVIDUAL TRAINING STANDARDS:

TASK NUMBER

Install and Fire or Recover M18A1 Claymore Mine

G-0300-9.1

Install and Recover M18A1 Claymore with Tripwire(s)

G-0300-9.2

Install and Recover M16A1 Antipersonnel Mine

G-0300-9.3

Process Known or Suspected Enemy Personnel

G-0300-2.3

ACTIONS:

- *1. Platoon commander designates assault element, support element, and security element.
 - *2. Platoon commander and element leaders, accompanied by the radio operator (RO) and security personnel, conduct leader's reconnaissance of the proposed ambush site to confirm the plan and return to the ORP.
 3. Security element departs ORP and moves to designated positions to secure the ORP and the flanks of the ambush site.
- * Leader tasks

The Actions listed in the Battle Drill are stated in terms of observable performance steps that in essence serve as a baseline for evaluating training proficiency.

1-4. DIFFERENCES BETWEEN PERFORMANCE-ORIENTED TRAINING AND CONVENTIONAL TRAINING

Conventional training relies on the lecture as its chief method of instruction. Performance-oriented training uses short demonstration and "*learning by doing*" as its main means of instruction.

Conventional training places the instructor in the central role. Performance-oriented training makes the Marine active and centers training around him—giving him the time and support he needs to learn.

Conventional training use "grades" to rate what the Marine has learned. Performance-oriented training sets standards all Marines must meet. When Marines do not meet the standards, **THEY PRACTICE UNTIL THEY CAN.**

Section II. DESIGN/DEVELOP THE TRAINING PROGRAM

2-1. GENERAL

To **DESIGN** a training program, the leader will follow the basic troop leading procedures: Begin Planning, Arrange and Make Selection, Complete the Plan, Issue the Order, and Supervise (**BAMCIS**).

To **DEVELOP** a training program, the leader will use the **FIVE-PARAGRAPH ORDER** format: Situation, Mission, Execution, Administration/Logistics, Command and Signal(s) (**SMEAC**).

2-2. BEGIN PLANNING (*Analyze*)

1. The Company Commander will begin planning by analyzing his unit's operational mission and then select the Battle Drills needed to support this operational mission. The selected Battle Drills will then be organized so that they create a Field Training Exercise (FTX).

2-3. ARRANGE AND MAKE SELECTION OF DRILLS/TASKS

1. Select Battle Drills to support the mission:

The following Battle Drills could be selected to support the actions necessary to execute the following mission:

DELIBERATE ATTACK (Point Ambush)

- | | |
|-------|---|
| Drill | 1. Prepare for Combat |
| | 2. Conduct Movement Techniques |
| | 3. Establish Enroute Rally Points |
| | 4. React to Indirect Fire |
| | 5. Establish Hasty Fighting Position |
| | 6. Cross Danger Area |
| | 7. React to Ambush |
| | 8. Conduct Hasty Ambush |
| | 9. React to Air attack |
| | 10. Establish Objective Rally Point |
| | 16. Acquire Targets and Distribute Fire |
| | 18. Offensive Actions at the Objective |
| | 19. Conduct Point Ambush |
| | 27. Consolidate and Reorganize |
| | 28. Occupy, Prepare, and Defend |

2. The Company Commander will then decide under what **MOVEMENT** and **ENVIRONMENTAL** conditions the mission/FTX will be executed.



3. Organize Drills to form Situational Training Exercises (STXs):

Squad/platoon **drills** are the key building blocks which support unit missions. The next step is to link the selected drills into logical, tactical scenarios to form *Situational Training Exercises (STXs)* that will promote individuals/units readiness to include emphasizing the various **movement** and **environmental** conditions. Although an STX is mission-oriented, it generally will not, by itself, result in mission accomplishment. Usually multiple STXs are required in order to train all of a mission to proficiency.

*Platoon commanders, assisted by Platoon Sergeants, will develop Situational Training Exercises based on the Battle Drills selected by the Company Commander. STXs should be organized so that they form a **realistic flow** of battlefield activity. *Prepare, Mow, Shoot, Defend.*

The following are possible combinations that can be formed into STXs:

DRILL NUMBERS

STX 1	1, 2, 27
STX 2	1, 2, 3, 27
STX 3	1, 2, 3, 4, 5, 27
STX 4	1, 2, 3, 4, 5, 6, 27
STX 5	1, 2, 3, 4, 5, 6, 7, 27
STX 6	1, 2, 3, 4, 5, 6, 8, 27
STX 7	1, 2, 3, 4, 5, 6, 9, 27
STX 8	1, 2 thru 10, 16, 18, 19, 27 (28)

After the platoon commander has designed the Situational Training Exercise (STX), he will then provide the squad leaders with the selected Battle Drills.

4. Identify Individual Skills (Tasks) to be Trained:

Squad leaders will review the Battle Drills and identify related individual tasks that need to be trained to support the drill.

EXAMPLE: The following individual tasks support Battle Drill 19.

Drill 19: CONDUCT A POINT AMBUSH

UNIT: PLATOON

INDIVIDUAL TRAINING STANDARDS:

TASK NUMBER

Install and Fire or Recover M18A1 Claymore Mine
Install and Recover M18A1 Claymore with Tripwire(s)
Install and Recover M16A1 Antipersonnel Mine
Process Known or Suspected Enemy Personnel

G-0300-9.1
G-0300-9.2
G-0300-9.3
G-0300-2.3

The analysis and planning actions that have occurred up to this point can be visualized using the following *pyramid* which illustrates the *building block* approach to training development:

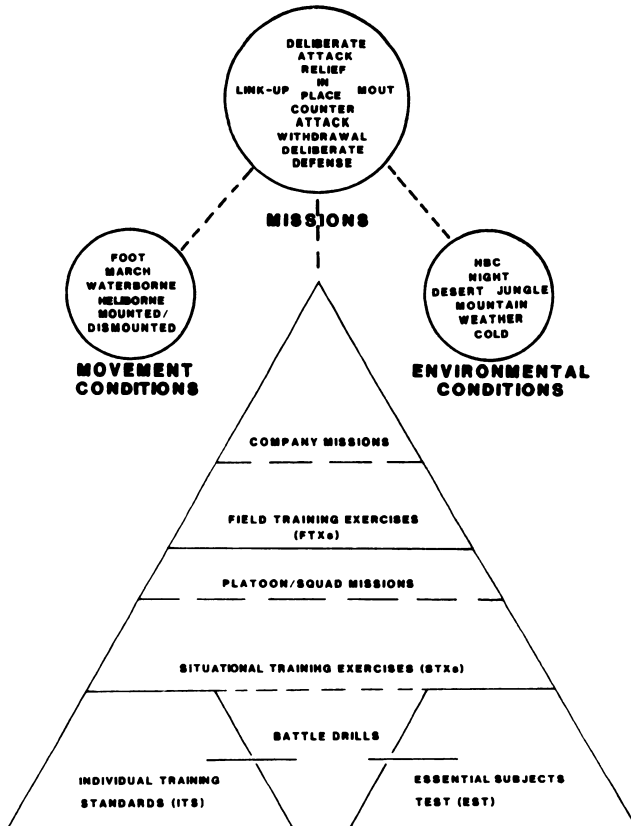


Figure 1-2. Training Pyramid.

2-4. COMPLETING THE PLAN

1. The company/platoon commanders will now develop and submit a FIVE-PARAGRAPH ORDER which specifically addresses the SITUATION and MISSION to include indication **who, what, when, where, and how** the drill is to be executed, and the type of equipment and other support required.

Drill 1: PREPARE FOR COMBAT	
SITUATION:	The CO has determined that the platoon need to obtain proficiency in a Deliberate Attack . Movement will be a Foot March and will be executed at Night .
MISSION:	CONDUCT POINT AMBUSH.
EXECUTION:	WHO: 1st Platoon WHAT: Battle Drills: 1-10, 19, 27, and 28 WHEN: Next Week WHERE: Kilo Training Area HOW: Squad and platoon leaders will determine individual and unit training proficiency and demonstrate the standards.
ADMIN/ LOGISTICS:	T/O weapons and T/E equipment. Training site providing at least 500 meters of movement and permitting cross-country movement.
COMMAND & SIGNAL(S):	Select method for signaling such as pyro, hand and arm signals, whistles, etc.

2. Prepare a Unit Training Schedule:

After the FIVE-PARAGRAPH ORDER is complete, the unit leader will use Backward Planning procedures to develop the Training Schedule:

a. Estimate the time required to perform all individual and unit actions for executing the selected Battle Drills.

NOTE: A time-phase plan is only a guide; training is **performance** oriented, not time-oriented.

b. Prepare and submit a **TRAINING SCHEDULE** that directly corresponds with the EXECUTION paragraph of the FIVE-PARAGRAPH ORDER. (See figure 2-1, page 9).

PAGE OF UNIT TRAINING SCHEDULE		UNIT: Echo Company 2nd Bn, 8th Marines 2nd Marine Division			DATE: 15 Sep 86	
					INCLUSIVE DATES: FROM 15 Sep 86 TO 20 Sep 86	
WHO	WHAT	WHEN	WHERE Trng Area/Range	HOW Trainer/Evaluator	REFERENCE	REMARKS
1st PLT	Prepare for Combat - Drill #1 Conduct Movement Tech - Drill #2 React to Indirect Fire- Drill #4 Cross Danger Area - Drill #6 React to Ambush - Drill #7 Consolidate and Reorganize - Drill #27	0800 - 1100	Mike Delta	Sq Ldrs	MCO 1510.35A ITSS Battle Drill Guide	
All Hands	CHOW	1100 - 1200	Mike	Plt Cmdrs		
1st PLT	Prepare for Combat - Drill #1 Conduct Movement Tech- Drill #2 React to Indirect Fire- Drill #4 Cross Danger Area- Drill #6 React to Ambush - Drill #7 Consolidate and Reorganize - Drill #27	1200 - 1600	Mike Delta	Plt Cmdrs		

Figure 2-1. Training Schedule.

3. Coordinate final preparations/acquisitions/rehearsals before actual drill training:

NOTE: This step should reflect information cited in the ADMIN/LOGISTICS and COMMAND and SIGNALS paragraphs of the Five-Paragraph Order. (e.g., equipment, materials, training site, etc.).

a. Ensure that the training area and resources (equipment, support personnel, etc.) will be available at the correct time and place.

b. Conduct *pre-evaluation* to identify Marines who have previously mastered the task(s) and, also, those requiring additional training *necessary* to master individual tasks prior to drill training. Use the following suggested methods:

- Observe individuals on-the-job and/or select specified tasks to be demonstrated by individuals (pre-evaluation).

- Review individual task books and unit proficiency charts to determine performance deficiencies (focus on *red* and *blank* areas/lines on chart).

NOTE: The use of pre-evaluation prior to conducting training will promote more effective use of time during actual drill training.

c. Select the Job Aids to be used in helping to increase individual proficiency prior to drill training.

d. Prepare the training area (designate squad training sites, equipment, etc.).

e. Arrange for a squad to demonstrate the battle drill.

NOTE: The platoon commander must ensure that the squad has mastered the drill prior to demonstration.

f. Platoon commanders and squad leaders will participate in and/or conduct leader training as required to ensure leader proficiency for conducting drill training.

g. Conduct rehearsals in preparation for drill training.

Section IV. ISSUE THE ORDER (Implement)

Drill training should be conducted in a TALK THROUGH - WALK THROUGH - RUN THROUGH sequence:

3-1. INITIAL TRAINING (Learning Tasks) (Talk Through)

This type of training introduces the Marine to the tasks. Marines practice each task step until they can perform all the steps *properly* and in the correct sequence.

1. Tell the Marines *what* they are expected to do (SITUATION and MISSION).
2. Explain the performance standards for each task to be performed (EXECUTION).
3. Use the selected drills and job aids to explain in detail the performance steps required to execute the task.
4. *Demonstrate* the individual task/battle drill. (Job aids may be used.)
5. Have all Marines explain their roles in the drill.
6. Train individual tasks:
 - a. Assign fire-team leaders to train individual tasks.

NOTE: To ensure that Fire-Team Leaders can train their team members to standard, have each team leader demonstrate his proficiency in the task during step 4 or 6.

- b. Squad/Fire-team leaders will assign Marines who demonstrated proficiency during pre-evaluation to serve as peer-trainers. (Train-up/Cross Train)

SAFETY

EXERCISE SAFETY PRECAUTIONS THROUGHOUT DEMONSTRATIONS AND DRILL TRAINING!

A well-disciplined, trained unit executing a thoroughly prepared training plan is normally accident-free. Although accidents can occur through no fault of the Marine, most accidents result from unsafe acts on the part of inadequately trained or unsupervised personnel.

3-2. PROFICIENCY TRAINING (Train to Standards) (**Walk Through**)

During this stage of training, Marines *perform repetitiously* until they can meet the standards of the training objectives. During this stage, Marines are taught the close link between various tasks. They also learn the transfer skills that link many tasks.

During proficiency training, leaders turn Marines' mistakes into effective training tools.

EXAMPLE: If Marines fail to use proper light and noise discipline at night, a leader can point out that they are revealing their position and providing a target for enemy direct and indirect fire.

To conduct proficiency training, do the following:

1. Slowly take the individual/unit through the task/drill using a step-by-step approach:
 - Observe the actions of each Marine, ensuring that they perform the actions correctly, critiquing and coaching those who need help.
 - Use job aids and demonstration to reinforce performance until each individual performs the tasks according to prescribed performance steps.
 - Use Marines who have *mastered* task(s) to provide assistance in training peers. (Train-up/Cross Train)
2. Gradually decrease the amount of coaching and increase the performance speed until you are satisfied that the individual/unit can perform the task/drill within the specified standards.

3-3. SUSTAINMENT TRAINING (Train with Realism) (**Run Through**)

This stage of practice applies more to collective than to individual training. During this phase of training, leaders will use STXs to determine the *quality* of training received during the initial and proficiency training stages. During this stage of practice, leaders raise the level of realism until the *quality, speed, stress, and environment* come as close as possible to actual wartime missions.

1. Have the Marine/Unit execute the task/drill at normal speed until mastered to prescribed standards.
2. Use multi-echelon approach to training.
3. As the unit gains proficiency, vary the terrain and conditions (e.g., hills, vegetation, NBC, night, weather, etc.).

Section V. SUPERVISE (Evaluate)

4-1. GENERAL

- o The single most important evaluator is the leader of the unit EXECUTING THE TRAINING.
- o The primary focus of Battle Drill training should be on INTERNAL evaluation.
- o Leaders at every level must be fully knowledgeable of the linkage between individual and collective tasks.
- o Leaders must MASTER individual tasks before *effective evaluation* can occur.
- o Evaluation is a *continuous* process that occurs throughout the training cycle.

PURPOSES OF EVALUATION

- o Assess individual and collective task proficiency.
- o Determine weaknesses and strengths in order to provide *feedback*.
- o Reaffirm accountability and responsibility for established standards.

BENEFITS OF EVALUATION

- o Prioritizes training requirements.
- o Identifies causes of unsatisfactory performance.
- o Provides a follow-on means of *demonstrating* correct procedures.
- o Emphasizes the importance of individual skills within the collective framework.
- o Enhances Marine pride in achievement and builds team morale.
- o Results in improved proficiency.

4-2. EVALUATION TOOLS

Individual (MOS and EST) tasks form the basic building blocks for training infantry units. It is only after a unit has successfully trained its individuals to prescribed standards that it can engage in effective collective training. It, therefore, becomes necessary to conduct on-going evaluation at each level of training in order to identify individual and unit training needs and trends.

The evaluation tools are the Individual Task Proficiency Book (ITPB), Individual Training Proficiency Chart (ITPC), and the Unit Proficiency Chart (UPC). These tools should be used as follows to develop a visual picture of training needs and trends.

1. Individual Task Proficiency Book

The Individual Task Proficiency Book serves as a tool to aid the squad leader's memory as he *evaluates* the performance of his squad members. As squad members perform each task, the squad leader will **record the date each task is evaluated**, using the following **color code system**:

BLUE DATE = MARINE IS PROFICIENT
RED DATE = MARINE IS NOT PROFICIENT

(See sample below)

TASK DESCRIPTION	TASK#	DATE
Engage Target M16A2	4.3	4 Mar 86
Engage Target with M203	5.5	21 Aug 86
Maintain Handgrenade	8.2	14 Jun 86
Engage Target Handgrenade	8.3	14 Jun 86
Fire M16A1 Claymore Mine	9.1	25 Aug 86
Install Claymore with Tripwire(s)	9.2	25 Aug 86
Fire M16A1 Antipersonnel Mine	9.3	
Install Antitank Mine	9.4	26 Aug 86

Figure 4-1. Individual Task Proficiency Book (ITPB).

4-3. EVALUATION PROCEDURES

With the above purposes and benefits in mind, the squad leader is ready at this point in drill training to execute his leader tasks along with the squad. **The platoon commander or platoon sergeant must now assume the primary evaluation responsibility for the squad.**

1. When the squad leader is confident that the unit has *mastered* the drill, he will report to the platoon commander that the squad is ready for evaluation.
2. If the drill is not performed correctly, the squads will continue to practice until the drill is mastered.
3. Upon completion of the drill training, the squad leader will make appropriate entries in each squad member's task book to indicate status of individual tasks performed during the drill (see figure 4-1, page 14).
4. The platoon sergeant will review the task books, then, transfer the squad leader's evaluations onto the Individual Proficiency Chart (ITPC) (see figure 4-2, page 15).
5. The platoon commander then transfers the platoon evaluation results onto the Unit Proficiency Chart (UPC) (see figure 4-3, page 15).

The above charts can be used to identify individual and unit training trends and needs in order to provide follow-up or alternative training as necessary.

Information gained by the company commander and platoon commanders during training formations is used to plan future training. Analysis of the individual and unit proficiency charts (see Section V, p. 16) will aid leaders in determining what individual, leader, and collective training needs should be stressed.

The next step in drill training would then be to *analyze* individual and unit performance using information plotted on the chart.

Section V. ANALYZE PERFORMANCE EVALUATION

5-1. GENERAL

After training evaluation results have been recorded in individual task books and on the Individual and Unit Training Proficiency Charts, the question then becomes one of how to use this information to remedy training deficiencies (RED/BLANK areas) and/or to plan for future or alternative training needs. This question applies not only to how to assess and meet the needs of those who do not perform up to standard but also to those who demonstrated the capability to perform skills at the required proficiency levels.

When analyzing individual and unit performance, initial emphasis must still be placed on ensuring that individual proficiency is up to par before attempting to analyze unit performance. Just as the Marine's skill in performing tasks to standard (his will to learn and put that skill to work) is critical to being a functional member of the team, so are his skills important to the team in doing its part within the unit.

1. Analyzing Individual Performance

When assessing performance, you will find that the individual Marine will fall into one of the following categories:

ABLE AND WILLING
UNABLE BUT WILLING
ABLE BUT UNWILLING
UNABLE AND UNWILLING

2. Analyzing Unit Performance

Just as we described individuals in the four categories of the “able and willing” scale, you can also assess team performance using a similar scale to identify unit training trends and needs:

LOW SKILL, LOW WILL, LOW TEAMWORK
HIGH SKILL, LOW WILL, LOW TEAMWORK
HIGH SKILL, HIGH WILL, LOW TEAMWORK
HIGH SKILL, HIGH WILL, HIGH TEAMWORK

In order to tailor the way you lead, you need to be able to *first*, identify which one of the four kinds of individual/unit you have to work with, and *second*, be able to provide the right leadership for that particular kind of individual/unit. Charts A and B (pages 18 and 21) are provided for your use in determining the status of individual/unit performance and for formulating solutions or alternatives to tailor on-going training.

CHART A

5-2. ANALYZING INDIVIDUAL PERFORMANCE

PERFORMANCE CHARACTERISTICS: TRAINING PROCEDURES:

I. ABLE AND WILLING

- | | |
|---|---|
| o Has done the task right before. | o Tell him <i>what</i> you want done. Don't waste time telling him how. He already knows. |
| o Does many other tasks without being told. | o Tell him when to get started and when to be finished. |
| o Never seems satisfied until work is done "right." | o Supervise easy. Let him work. Give him your trust. |
| o Accepts the need to put in extra time when necessary to get the job done. | o Always tell this kind of Marine how well he met your standards. |
| o Works out ways to get the job done better. | o Stretch him out with a little more responsibility each time. |
| o Recent performance has been satisfactory. | |

II. UNABLE BUT WILLING

- | | |
|--|--|
| o Has never performed task before, or can't recall if he did. | o Tell him <i>what</i> you want done. Tell him <i>why</i> . Tell him <i>how</i> and show him how, <i>where</i> , with what, when to start, and when to finish. |
| o Recent performance has been enthusiastic, particularly on tasks similar to what you want him to do know. | o Encourage him to ask questions. |
| o Pays close attention to your instructions. | o Show him the standard. Demonstrate it if you can. Let him see what things look like when the job is done right. |
| o Watches others doing same task; asks questions. | o Supervise closely. Check frequently. Help him correct mistakes. Give him time. |
| o Spends some of his own time learning or practicing. | o Reward heavy; punish lightly. |

ANALYZING INDIVIDUAL PERFORMANCE

PERFORMANCE CHARACTERISTICS: TRAINING PROCEDURES:

III. ABLE BUT UNWILLING

- o Recent performance has been off and on, sometimes to standard, sometimes below standard.
- o Has done the job right before, but keeps asking for instructions and assistance.
- o Doesn't appear to be concentrating. Work is sporadic.
- o Takes every opportunity to be absent from training.
- o Lacks confidence in himself and his work.
- o Check first for **WHY** the Marine is unwilling. Probably one of two reasons: lack of confidence or personal problems.
- o If he seems to lack confidence:
 - Get him to tell you how he would do the task.
 - Give him encouragement; get him started.
 - Handle him as "able and willing."
- o If he appears to have personal problems:
 - Arrange for him to talk about it with you later. Give him a specific time.
- o Tell him *what* you want done, *when* to start, *when* to finish.
- o Spell out clearly what the *standards* are.
- o Spell out clearly what the *reward* or *punishment* will be.
- o Supervise closely.
- o Check task completion against standard.
- o Always follow through with the kind of reward or punishment you promised.

ANALYZING INDIVIDUAL PERFORMANCE

PERFORMANCE CHARACTERISTICS: TRAINING PROCEDURES:

IV. UNABLE AND UNWILLING

- | | |
|---|---|
| <ul style="list-style-type: none"> o Has never performed the task to standard before. o Recent performance has been below standard, even when he has received a lot of assistance and instruction. o Works only when closely supervised. o Seems satisfied with below-standard results. o Pays little attention to instructions; half listens. | <ul style="list-style-type: none"> o Explain carefully what you want done and how you want him to do it. o Question him to check that he knows exactly what to do. o Spell out clearly what the standards are. o Spell out clearly what the reward or punishment will be. o Check task completion against standard. Follow through with promised reward or punishment. |
|---|---|

5-3. ANALYZING UNIT PERFORMANCE

PERFORMANCE CHARACTERISTICS: TRAINING PROCEDURES:

I. LOW SKILL, LOW WILL, LOW TEAMWORK

- | | |
|--|---|
| <ul style="list-style-type: none"> o Poor ITS/EST performance by a large number of Marines. | <ul style="list-style-type: none"> o Focus on building individual skill, and do it through the NCOs. Give them time, resources, instructions, supervision, and critique. |
| <ul style="list-style-type: none"> o Low numbers of subtasks completed on last MCCRES. | <ul style="list-style-type: none"> o Meet with all NCOs to discuss in detail the problems detected and the standards expected. |
| <ul style="list-style-type: none"> o High rates of Article 15, Court Martials and UA. | <ul style="list-style-type: none"> o Establish individual skill as first priority. |
| <ul style="list-style-type: none"> o Large number of early discharges. | <ul style="list-style-type: none"> o Direct each leader to "inventory" the individual skill of each individual he's responsible for and come up with a plan for making up shortages. |
| <ul style="list-style-type: none"> o Low level of physical fitness. | <ul style="list-style-type: none"> o Schedule as much available time for individual skill training as possible. |
| <ul style="list-style-type: none"> o Extremely low reenlistment rate among first-termers. | <ul style="list-style-type: none"> o Push integrated individual skill training. Reward NCOs who work out their own informal "systems" for good integrated training. Many of them will. |
| <ul style="list-style-type: none"> o Low reenlistment rates for career NCOs. | <ul style="list-style-type: none"> o Evaluate individual proficiency frequently. |
| <ul style="list-style-type: none"> o Poor overall personal appearance of individual Marines. | <ul style="list-style-type: none"> o Set successive goals for percentage of individual skills to be trained. Don't let up. |
| <ul style="list-style-type: none"> o Equipment missing, poorly maintained, or not "signed for." | <p>Get 60%, then go for 70%, then 80%. When you get to around 95%, maybe you can slack off a little.</p> |
| <ul style="list-style-type: none"> o Unit area and billets poorly maintained. | <ul style="list-style-type: none"> o When poor performance begins to disappear and the NCOs have individual skill levels moving upward, begin to shift up to the next "way to lead." |
| <ul style="list-style-type: none"> o Large number of complaints about the unit. | |
| <ul style="list-style-type: none"> o Absences from scheduled training. | |

ANALYZING UNIT PERFORMANCE

PERFORMANCE CHARACTERISTICS: TRAINING PROCEDURES:

II. HIGH SKILL, LOW WILL, LOW TEAMWORK

- o High ITS/EST proficiency.
- o Hard work on individual skills, when NCOs are supervising.
- o Low number of subtasks completed on last MCCRES.
- o Many hours dedicated to individual training during recent training weeks.
- o Poor performance by Marines in the absence of leaders.
- o High Article 15 rate and frequent use of other punishment.
- o Higher than normal frequency of inspections and pre-inspections.
- o High volume of criticism directed at unit-level leaders.
- o Little mutual help and assistance among NCOs and, therefore, among the Marines also.
- o Have NCOs double their effort on two things: (1) rewarding good performance and (2) keeping their men informed, especially about why they are required to perform certain tasks.
- o Set the example and begin by delegating twice as many tasks to your able and willing subordinate leaders. Push this all the way down the chain until fire-team leaders delegate tasks to able and willing Marines
- o Open up more opportunities for Marines and leaders to contribute to the unit. Give them opportunities to volunteer to assume extra responsibilities, work on certain unit projects, make suggestions, and so on.

ANALYZING UNIT PERFORMANCE

PERFORMANCE CHARACTERISTICS: TRAINING PROCEDURES:

III. HIGH SKILL, HIGH WILL, LOW TEAMWORK

- | | |
|---|---|
| <ul style="list-style-type: none">o High ITS/EST proficiency.o Low number of subtasks completed in last MCCRES.o Large number of positive comments from troops about squad and platoon level leadership.o High level of individual personal appearance.o High reenlistment rates among first-termers and NCOs.o Inconsistent quality in performance of team tasks.o Willing, but poorly coordinated, performance, confusion among Marines when leaders aren't around.o High level of physical fitness.o Individual equipment all on hand and maintained.o Equipment and supplies used by more than one Marine are apt to be missing, inoperable, or poorly maintained. | <ul style="list-style-type: none">o Focus on building teams—“horizontal” teams (among squad leaders, for example) and “vertical” teams (among the links in the chain of command).o Call all subordinate leaders together, both commissioned and noncommissioned.o Continue to emphasize the importance of effective individual proficiency by rewarding individuals for doing the right things the right way.o NCOs support the unit training efforts by keeping individual skill levels maintained and by building the basic fire teams, crew teams, and squads that the officers need to work with.o Schedule BATTLE DRILLS (of all kinds), beginning at squad level, wherever and whenever the training schedule and any available open time will permit.o Ensure that all leaders are trained and critiqued in MCCRES subtasks and techniques of effective DRILL.o Plan and conduct the Battle Drills required. |
|---|---|

ANALYZING UNIT PERFORMANCE

PERFORMANCE CHARACTERISTICS: TRAINING PROCEDURES:

IV. HIGH SKILL, HIGH WILL, HIGH TEAMWORK

- o ITS/EST proficiency is consistently high.
- o High rate of subtasks completed on last MCCRES.
- o Barracks thefts and crimes against each other down to almost zero.
- o Very few comments critical of the leadership at any level in the unit.
- o Individual and crew-served weapons and equipment maintained in a high state of readiness.
- o Unit area well-maintained and policed all the time.
- o Individual Marines usually do the right things, the right way, on their own, without being told by leaders.
- o Individual Marines frequently police each other's performance and behavior.
- o Marines and leaders usually use the words "us" and "we" and "our" when they're talking about the unit.
- o The team will often mix maintenance of weapons and equipment right in with active battle drill performance. Short breaks in the action will find team members, on their own, cleaning this and adjusting that.
- o Issue mission-type orders.
- o Provide general supervision.
- o Increase level of responsibility for subordinates so as to provide challenge.

PART II
BATTLE DRILLS

Section I: GENERAL

In preparing to execute any of the drills in Part II, use the following information/references to aid in the planning process.

	Page
MOVEMENT CONSIDERATIONS and PROCEDURES	25
ENVIRONMENTAL CONSIDERATIONS and PROCEDURES	27
RANGES/MANEUVER AREAS	37
TRAINING SUPPORT EQUIPMENT/AMMUNITION	43

MOVEMENT CONSIDERATIONS and PROCEDURES

MOVEMENT CONDITION: WATERBORNE

1. Leader receives the mission order.
2. Leader organizes unit into boat teams.
3. Unit must practice dry/wet debarkation procedures (Unit SOP).
4. Leader inspects life preservers.
5. Leader inspects weapon and equipment.
6. Leader ensures that weapon and equipment lashing procedures are practiced (Unit SOP).
7. Unit practices emergency abandonment procedures from AAV (Unit SOP).

MOVEMENT CONDITION: HELIBORNE

1. Leader receives mission order.
2. Leader organizes heliteams.
3. Unit practices enplaning procedures (Unit SOP).
4. Unit practices procedures for loading and unloading crew-served weapons.
5. Unit practices deplaning procedures (Unit SOP).
6. Unit must practice emergency procedures for Forced Landing and Water Ditching.

MOVEMENT CONDITION: MOUNTED/DISMOUNTED

1. Leader receives mission order.
2. Leader coordinates with tank commander.
3. Leader coordinates communication procedures with tank commander.
4. Unit practices mounting and dismounting procedures (Tank, Truck, AAV, and LAV).
5. Leader assigns sectors of responsibility to unit.
6. Leader inspects vehicles to ensure that they are properly reinforced with armor or sandbagging.

MOVEMENT CONDITION: FOOT MARCH

1. Leader receives the mission order.
2. Leader organizes unit in tactical formation required according to selected or designated route.
3. Leader designates uniform, weapons, and equipment.
4. Leader assigns sector of fire.
5. Leader inspects weapon and equipment.
6. Leader establishes communication and control of unit movement.
7. Unit rehearses immediate actions as required.

ENVIRONMENTAL CONSIDERATIONS and PROCEDURES

ENVIRONMENTAL CONDITION: NIGHT

Night operations and operations during periods of limited visibility (*smoke and fog*) present both special difficulties and important advantages.

Difficulties

- o Control of men and weapons
- o Navigation
- o Distinguishing between friend and foe
- o Reduced ability to find targets
- o Control of supporting fires

Certain surveillance, target acquisition, night observation (STANO) devices (*active infrared*) may be detected and neutralized by the enemy.

Advantages

- o Conceals friendly movement
- o Reduces requirement for suppression
- o Helps achieve surprise
- o Reduces range and mutual support of enemy weapons systems
- o Reduces effectiveness of enemy fires
- o Increases time for enemy to commit resources
- o Produces psychological aspect of the enemy not knowing what is going on around him

General Considerations (appropriate to all operations)

- o Develop simple tactical plans.
- o Select easily recognized checkpoints and routes.
- o Conduct daylight reconnaissance, if possible.
- o Make maximum use of night observation or devices.
- o Use night vision and scanning techniques.
- o Noise, light, and movement discipline is critical and must be maintained at all times.

Movement Procedures for Night Operations

- o Use a combination of dead reckoning (compasses) and easily identifiable landmarks (roads, streams, power lines, railroad tracks, etc.) to maintain direction at night.
- o Use pacemen to measure distance traveled.
- o Use STANO devices, especially AN/PVS-5 lightweight goggles, to survey terrain and road maps. These can be especially helpful to pacemen and leaders to enhance control and navigation.
- o Use active IR devices as a last resort because they are easily detected by the enemy.
- o Always assume enemy has STANO devices and move on covered and concealed routes.
- o Reduce intervals to maintain visual contact between individuals and between squads to maintain control.
- o Reduce speed to maintain control.
- o Designate enroute rally points to be used during movement.
- o Leaders move near the front of their element to control speed and direction of movement.
- o Wear luminous tape on the backs of steel helmets or patrol caps.
- o Breaks in visual contact should be reported to unit leaders immediately.
- o When feasible, continuously send head counts forward to ensure accountability.
- o Use guides when necessary to avoid obstacles or for movement in and out of friendly positions.
- o Use red filter flashlight signals to aid in controlling movement.
- o SOPs for operation during darkness/periods of limited visibility should be established.

Offense Preparations for Night Operations

- o Issue warning order as promptly as possible.
- o Obtain information from personnel who have previously patrolled the area to be attacked (if applicable).
- o Conduct a map reconnaissance and tentatively select attack position and LOD; routes from AA to attack position and from attack position to LOD; point of departure; direction of attack; checkpoints; release points (squad/platoon); probable line of deployment; objective (usually given); and limit of advance.
- o Conduct a daylight/dusk leader's reconnaissance with squad leaders and security team (as practical depending on METT-T conditions and restrictions imposed to preserve surprise). Recon should concentrate on the following:

Identify the attack position and line of departure, and routes to them. Mark the routes and/or post guides.

Confirm the direction of attack beyond the line of departure. Take compass bearings and locate by observation identifiable terrain features/landmarks to assist in maintaining control at night (roads, trails, ridges, power or phone lines/easements, hedgerows, railroad tracks, streams, and so forth).

Confirm location of checkpoints, release points, probable line of deployment, objective, and limit of advance.

NOTE: Daylight reconnaissance of actual release points, probable line of deployment (PLD), objective, and limit of advance is risky and should be done by observation from stand-off positions as far away as possible. Extreme care must be taken to avoid enemy observation or detection which would compromise the element of surprise and/or lead to the enemy ambush.

- o Issue the OPORD in time to allow squad leaders to conduct their own troop-leading procedures.

- o Control measures to be considered during night offensive operations include:

POINT OF DEPARTURE (PD). This is the exact place the platoon crosses the LD. Guides may be placed at the PD to help the platoon pass through friendly positions and obstacles.

DIRECTION OF ATTACK. This is a specific route along which the center mass of the platoon advances. It is used when a platoon commander needs to maintain tight control of his platoon in an attack.

CHECKPOINT. This is a point on the ground (usually a prominent terrain feature) designated to provide a reference for reporting friendly locations and to control movement.

PROBABLE LINES OF DEPLOYMENT. This is a place as close to enemy positions as the commander thinks the platoon can move without being detected. It should be on a terrain feature that is easy to find at night and perpendicular to the direction of attack.

RELEASE POINT (RP). This is a point designated for use during movement where the platoon commander releases control of his squads to the squad leader.

LIMIT OF ADVANCE (LOA). This is a recognizable terrain feature beyond which attacking troops will not advance. It should be far enough beyond and to the flanks to give security elements room to do their job.

- o Operational techniques to be considered for night operations include:

Increased use of tracer fire, whistles, control fire, and movement once surprise has been lost.

Illumination for a night attack. If used, it should be fired only after contact has been made and surprise has been lost.

Battlefield illumination that can be provided by indirect mortar or artillery illumination.

Units providing their own illumination using hand-held or 40-mm white parachute flares.

ENVIRONMENTAL CONDITION: NUCLEAR, BIOLOGICAL, AND CHEMICAL
WARFARE

INDIVIDUAL TRAINING STANDARDS:	TASK NUMBER
Detect Chemical Agent with M9 Chemical Agent	G-0300-13.1
Detect Chemical Agent with M256 Chemical Agent Detector Kit	G-0300-13.2
Prepare and Submit NBC-1	G-0300-13.3
Initiate Unmasking Procedures	G-0300-13.4
Cross Contaminated Area	G-0300-13.5

NUCLEAR, BIOLOGICAL, AND CHEMICAL WARFARE

Identify NBC Alarms	E-ES-08.01
Identify NATO NBC Markers	E-ES-08.02
Inspect/Maintain the Field Protective Mask	E-ES-08.03
State the Difference Between Training and Combat	E-ES-08.04
Filters for the Field Protective Mask	
Replace Filters in the Field Protective Mask	E-ES-08.05
Don and Clear the Field Protective Mask	E-ES-08.06
Remove and Stow Field Protective Mask with Hood	E-ES-08.07
Don Individual Protective Clothing	E-ES-08.08
Remove Individual Protective Clothing	E-ES-08.09
Drink While Masked	E-ES-08.10
React to Aerial Spray	E-ES-08.11
React to Chemical or Biological Attack	E-ES-08.12
Identify/Treat Nerve Agent Casualty	E-ES-08.13
Identify/Treat Blood Agent Casualty	E-ES-08.14
Identify/Treat Blister Agent Casualty	E-ES-08.15
Identify/Treat Choking Agent Casualty	E-ES-08.16
Identify/Treat Tear Agent Casualty	E-ES-08.17
Identify/Treat Vomiting Agent Casualty	E-ES-08.18
Identify/Treat Incapacitating Agent Casualty	E-ES-08.19
Identify/Treat Biological/Toxin Agent Casualty	E-ES-08.20
Take Immediate Action for Nuclear Attack	E-ES-08.21
Take Appropriate Action for Imminent Nuclear Attack	E-ES-08.22

ACTIONS:

1. All NBC defense equipment, both individual and unit, is on hand and operational.
2. Personnel to operate NBC defense equipment are trained/knowledgeable.
3. Protective overgarment is used according to unit's specified mission oriented protective posture (MOPP).
4. Necessary decontamination equipment is prepared and available for use.
5. Upon recognizing an NBC attack, all personnel take immediate action for protection.

6. Initial NBC reports and follow-up reports are submitted by responsible personnel using secure means when possible.
7. Casualties are given first aid as appropriate and evacuated when required.
8. Continuous detection and monitoring are carried out by designated personnel.
9. Individual decontamination is accomplished along with equipment decontamination. Required assistance for decontamination is requested.
10. Crossing of chemical or radiological contaminated areas is accomplished according to unit SOP for chemical contamination of personnel and equipment and allowable radiation dose; or the area is bypassed to continue the mission.
11. Continued detection and monitoring is accomplished until the area is "all clear."

ENVIRONMENTAL CONDITION: COLD WEATHER

Cold weather operation places a great stress on the unit and the individual Marine. Some of the effects are as follows:

Mobility:

- o Most suitable from mid-winter to early spring
- o Worst during the spring because of saturated ground, flooded roads, and low-lying areas are that turned into a swamp of mud
- o During winter is achieved by foot, skis, snowshoes, or sleds
- o By air provides the most effective method of movement
- o By tracked vehicles is generally good

Weapons:

- o Extremely low temperatures cause increased breakage of weapon parts.
- o Take care not to bring a weapon into a warm shelter because condensation causes the weapon to freeze and malfunction when you take it back outside into the cold temperatures.
- o Lubricate weapons with LSA down to -35F.
- o Lubricate weapons with LAW below -35F.

Personal Health:

- o Cold temperatures significantly increase the time required to perform simple tasks.
- o Use the buddy system to check for frostbite.
- o Wear proper clothing to prevent hypothermia.
- o Ensure that individuals drink plenty of fluids.
- o Avoid wearing too many layers of clothing when physical exertion is required.

ENVIRONMENTAL CONDITION: MOUNTAIN

The environmental effects of mountain operations are as follows:

Weapons:

- o Direct fire is less than normal.
- o There is considerable natural cover and concealment.
- o Overhead and long-range fires are greatly increased.
- o There is limited grazing fire and a great amount of dead space.
- o High angle weapons such as artillery, mortars, and grenade launchers are employed.

Communications:

- o High land mass blocks radio waves.
- o Higher echelon command and control is difficult to obtain.

Mobility:

- o Cross-country movement is extremely difficult.
- o Highways run along valley floors.
- o Roads and trails are few and normally primitive.
- o Helicopters can be limited by enemy air defense, weather, and/or altitude.

Unity:

Mountain combat leads to isolated conflicts by small units (company, platoon, squad, etc.).

ENVIRONMENTAL CONDITION: JUNGLE

Jungle operations are affected by two primary factors; *climate* and *vegetation*. These two factors combine to produce the following environmental effects:

Personal Health:

- o Increased rate of diarrheal and fungus diseases.
- o Create need to climatize for extreme humidity and heat.
- o Personal hygiene is paramount.
- o Protection is needed against mosquitos, flies, fleas, leeches, and other parasites.

Weapons and equipment:

- o Weapons require constant maintenance.
- o Equipment must be rugged, lightweight and man-portable.
- o Firing load of the individual Marine should be kept under 40 pounds.

Observation:

- o Observation severely limited to 20 or 30 meters.
- o Fields of fire severely limited.
- o Aerial observation is often ineffective.

Mobility:

- o Dense vegetation, gullies, steep hills, and cliffs.
- o Rivers and swamps are abundant.
- o Vehicle movement is canalized, impeded, or impossible.
- o Foot movement is slow and difficult.
- o Mobility is most effective through the use of helicopter.

NOTE: Jungle engagements are most often fought by company, platoon, or squad size units. The principal form of engagement is the ambush.

Security:

- o OPs and LPs must be intensified.

ENVIRONMENTAL CONDITION: DESERT

Consider the following procedures/effects during *desert* operations:

Deception:

- o Move at night or during sandstorms.
- o Maintain strict communication security.

Weapons:

- o Employ weapons at long ranges.
- o Place extreme importance on marksmanship at maximum range.

Land navigation:

- o Navigate using dead-reckoning techniques due to lack of prominent terrain features.

Concealment and Cover:

- o Concealment in the desert is difficult due to sparse vegetation.
- o Use camouflage nets, pattern and mud painting.
- o Reflective surfaces must be covered.
- o Gullies, washes and sand dunes provide cover for small units and individual weapons.

Personal Health:

- o Troops must be properly acclimated.
- o Continued exposure to the sun's rays cause sweating, sunburn, dehydration, cramps, heat exhaustion, and heat stroke.
- o Proper field sanitation and personal hygiene must be emphasized.

Communications:

- o Communication equipment can overheat and malfunction.
- o Ensure proper operation and maintenance of communication equipment.

CAMP PENDLETON RANGE/MANEUVER AREAS

RANGE	TYPE	ALLOWABLE WEAPONS	RANGE FACILITIES
103	Rifle Range	Rifles (all calibers)	Standard KD Course
104	Marksmanship Trng	Rifles, shotguns, pistols	BZO
108	Infantry weapons	Rifles, and machineguns	Firing line
109	Handgrenades	Fragmentation grenades	Six throwing positions
110	40mm grenades	M203	Eight firing positions
111	1000 range	Rifles and machineguns	Firing line
200	Infiltration	None by using unit	Control tower, controlled demolitions, wiring, machinegun simulators
200B	Day Infiltration	Blanks, bayonets, smoke devices, pyrotechnics	12 obstacles each in two lanes, one artillery, one machinegun simulator
200C	Infiltration	Blanks, smoke devices, pyrotechnics	Three obstacles (barbed wire, wooden wall, and reinforced trench)
207A	Demolitions	Not to exceed 1/2 lb, M-18A1 Claymore	Demolition pits
208A	Offensive combat (small arms)	Rifles	Control tower, machinegun simulators, controlled targets (electric)
208C	Offensive combat (small unit)	Rifles and machinegun	Control tower, machinegun & artillery simulators, targets (electric)
208D	Fortified position	Blanks, 1/4 lb TNT	Camouflage bunker, two TNT pits, & concertina wire
210A	Moving target (small arms)	Rifles	12 controlled horizontal moving targets (electric) on three tracks at 100, 125, and 150 meters

CAMP PENDLETON RANGE/MANEUVER AREAS

RANGE	TYPE	ALLOWABLE WEAPONS	RANGE FACILITIES
210B	Infantry weapons	Rifles, machinegun	Firing line
212	Defensive combat (small unit)	Rifles, machinegun 60mm & 81mm illum	Control tower, controlled targets, lighted firing line (night use)
212A	Zeroing Range	Rifle, machinegun	34 firing positions
215	Offensive combat (individual)	Rifles, shotguns, pistols	Control bunkers, remote controlled targets, artillery & machinegun simulators
217	Infantry weapons	M72 LAAW	10 firing positions
218	Defensive combat (individual combat positions)	Rifles	Control tower, controlled targets, 10 fixed positions
219	Demolition	Not to exceed 75 lbs untamped, 300 lbs tamped	Bunker, observation tower
221	Infantry weapons	Rifles, machineguns, shotguns, pistols, mortars, M72 LAAW, and M203	Control tower
222	Machineguns	7.62, .50 cal	Range markers
223	Offensive combat	Rifles, (mortars illum)	Control tower, controlled targets (electric) three lanes, lighted firing line (night use)
223A	Defensive combat (individual)	Rifles, (mortars illum)	Control tower, controlled targets (electric) combat firing position
315	Squad combat intelligence reaction crs	N/A	T-62 & BMP mock-ups
314	Field firing	M72 LAAW (sub-cal) rifles (mortars illum)	Control tower, 3 sets of tracks (moving targets) 7 defensive positions, 10 stationary positions

CAMP PENDLETON RANGE/MANEUVER AREAS

RANGE	TYPE	ALLOWABLE WEAPONS	RANGE FACILITIES
407 & A	Field firing	Rifles, machineguns, mortars, DRAGON, TOW, LAAW's	Firing line
407B	40mm Range	TOW, 40mm DRAGON, LAAW	Range fan markers
408	Offensive combat	Pistols, rifles, machineguns, mortars, LAAW, DRAGON	Control tower, controlled targets (electric) artillery and machinegun simulators machinegun simulators

CAMPLEJEUNE RANGE/MANEUVER AREAS

RANGE	TYPE	ALLOWABLE WEAPONS	RANGE FACILITIES
A-1	Pistol	Pistol and shotguns	10 targets (manual)
B-12	Pistol	Pistol and shotguns	10 targets (manual)
B-14	Fortified Position	Rifles, M60 machinegun, M72 rocket and SAW 13	2 earth bunkers, demolition pits
D-29	Rifle and Pistol	Rifles, pistols and shotguns	56 rifle targets, (15 yards) 16 pistol targets (manual)
D-30	Rifle and Pistol	Rifles and pistols	46 targets (15 & 25 yards) (manual)
F-2	Field Firing (Sq and Fire Tms)	Rifles, pistols and shotguns	Silhouettes and improvised targets
F-3	Field Firing	Rifle, M60 machinegun, SAW, shotguns, M72 rocket and 1/4 16 DML	Stationary tank and improvised targets
F-4	Fire Control	Rifles, pistols, SAW and shotguns	10 electro "pop-up" targets, 2 artillery and 1 machinegun simulator
F-6	Grenade	Handgrenade	5 throwing pits
F-10	Machinegun, search and traverse	Rifles, shotguns, pistols, SAW, and M60 machinegun	16 fixed targets 500 " 1000," and 75 meters
F-11	Rifle and Pistol	Rifles and pistols 15, 25, and 50 yards	15 targets (manual)
F-12	Assault Range (small unit)	Rifles, M60 machinegun and SAW and 3 tank hulls	24 electro "pop-up" targets, 3 bunkers
F-17	Dry Net	Service, organic	Dry Nets (blank ammo)
F-18	Night Field Fire	Rifles and 14.5	12 electro "pop-up" artillery sub-cal targets (each illuminated)
L-5	Offensive Combat (Sq, PLT and Company)	Rifles, pistols, M60 machineguns, SAW, shotguns	Hard wired and SARTS targets

CAMP LEJEUNE RANGE/MANEUVER AREAS

RANGE	TYPE	ALLOWABLE WEAPONS	RANGE FACILITIES
G-3	Infantry Weapons	All infantry weapons	Improvised targets
G-4	Demolition	Max 50 lbs TNT per shot	Demolition Area
G-5	Tank and LAV	105mm tank gun, 25mm cannon, TOW and artillery (direct fire)	Mechanized operated tank targets, STARTS and improvised tank hulls
G-6	Tank and LAV	105mm tank gun, artillery, machinegun, M16, 25mm cannon, TOW	Mechanized operated tank targets, STARTS improvised hulls
G-8	M-203 Launcher	M203 and MK19 grenade launcher	Armor hulls and improvised targets
G-9	LAW and SMAW	M72 rocket and SMAW	Armor hulls and improvised targets
G-10	Impact Area	Aircraft 250 lbs, artillery mortars TOW	Improvised targets, vehicle hulls
I-2	Demolition and Mines	Demolition 50 lbs, artillery linear rockets and land mines	Demolition Area
J-2	AVV, LAV and Tank (Sub-cal)	Sub-caliber devices	Scaled "pop-up targets and (silhouettes)
K-2	Impact Area	Aircraft 250 lbs, artillery mortars	Improvised targets vehicle hulls
K-211	M-203 and MK19 Grenade	M203 and MK19 grenade launcher	Material targets
K-212	Infiltration	Service weapons (blanks ammo)	Movement Area
K-301	LAW and SMAW	M72 rocket, 60mm/81mm mortars, SMAW	Armored hulls and improvised targets
K-302	BZO	Service rifles	Point and area targets 1000 inches
K-303	Basic Field Firing	Rifles, 60mm/81mm mortars, MG, SAW, M203	Point and area targets

CAMP LEJUNE RANGE/MANEUVER AREAS

RANGE	TYPE	ALLOWABLE WEAPONS	RANGE FACILITIES
K-305	Infantry Weapons (Demonstration)	All infantry weapons, except .50 cal, TOW,	Tank and AAV hulls 300-1000 yards
K-309	Machinegun and LAW	M60 machinegun, M72 rocket, rifles, SAW, 60mm/80mm mortars	Type "E" silhouette targets
K-315	Night Combat	Rifles, pistols, shotguns targets	12 electro "pop-up"
K-317	Close Combat	Rifles, pistols, shotguns, machineguns, SAW, mortars	Troop "wire" silhouettes and improvised targets
K-321	Transition	Rifles, pistols, shotguns, 60mm/81mm mortars	8 electro-mechanical targets
K-322	Realistic Target (Moving)	Rifles, pistols, shotguns 60mm/81mm mortars	8 electro-mechanical targets
K-323	Realistic Target (Moving)	Rifles, pistols, shotguns	1 moving target on a fixed monorail
K-325	LAW	M72 rocket	Tank and AAV hulls, moving target system for sub-cal
K-402	Fire and Movement	Rifles, M60 MG, SAW, 1/4 DML	Improvised targets, SARTS
K-405	Grenade	Handgrenade	6 throwing pits
K-406A	BZO	Rifles, pistols, shotgun	1000 "range pits"
K-406B	Demolition	51 lbs TNT per shot, M18 Claymore mine	As required
K-407	Quick Reaction (individual)	Rifles, pistols, shotguns	SARTS, artillery and demolition simulators, moving targets
K-408	Close Combat	Rifles, pistols, shotguns	Electro-mechanical "pop-up" targets

TRAINING SUPPORT EQUIPMENT

TASK NUMBER	TRAINING DEVICE	NSN
G-0300-1.1	MILES	Local TAVSC
G-0300-1.4	Man-sized silhouettes	Local procurement
G-0300-1.5	Engineer tape	8305-00-290-8396
G-0300-1.6	Compass, lensatic	6605-00-846-7618
	1:50,000 scale military map	Local procurement
G-0300-1.8	AN/PRC 77 field radio	TAM No. A2050
	flashlight	6230-00-264-8261
G-0300-1.10	AN/PRC 77 field radio	TAM No. A2050
	1:50,000 scale military map	Local procurement
	Compass, lensatic	6605-00-846-7618
	Coordinate scale & protractor	GTA 5-2-9
	Binocular M13A1, 6X30	6650-00-530-0973
G-0300-2.2	Message Book NAVMC 694	0000-00-000-9205
	Binocular M13A1, 6X30	6650-00-530-0973
G-0300-2.4	Electronic anti-instruction device AN/GSO-151	6350-00-240-8767
G-0300-3.1	Night vision sight	
	AN/PVS-4	5855-00-629-5334
	Brush, cleaning	7920-00-035-8184
	Lens tissue	6640-00-597-6745
G-0300-4.1	Night vision sight	
	A/N PVS-4	5855-00-629-5334
G-0300-5.2	Cleaning equipment	Expendable supplies
	Rifle bore cleaner	1005-00-242-5687
	Drycleaning solvent	6850-00-281-1985
G-0300-5.5	Limited stakes	Field expedient
G-0300-9.1	Blasting cap test, M51	6625-00-999-3454
	Firing wire	6145-00-542-3968
G-0300-9.2	Crimper, blasting cap	5100-00-029-0683
	Tape, pressure sensitive	7510-00-027-3327
G-0300-9.5	Engineer tape	8305-00-290-8396
	Nonmetallic probe	Locally produced
	Rope, manila 1/4 in diam	4020-00-231-9021
	Grapnel	2040-00-378-8440
G-0300-10.1	Pliers (TL 13A)	5120-00-247-2063
	Knife	5110-00-162-2205
G-0300-10.2	Cleaning compound	7930-00-395-8542
	Cleaning rags	7920-00-205-1711
	Cleaning brush	7920-00-035-8184
G-0300-10.3	Tool kit (TE-33)	5180-00-408-1859
	Electrical tape	5970-00-419-4291
	Wire splicing kit	
	MK356	5975-00-657-2183
G-0300-10.4	Trichloroethylene	6810-00-292-9625
G-0300-10.9	Antenna wire (WD-1)	5995-00-823-2715
	Measuring tape	5210-00-243-2878

TASK NUMBER	TRAINING DEVICE	NSN
G-0300-11.1	Compass, lensatic	6605-00-846-7618
G-0300-11.2	Coordinate scale and protractor 1:50,000 scale military map	GTA 5-2-9 Local procurement
G-0300-11.3	Compass, lensatic Coordinate scale and protractor	6605-00-846-7618 GTA 5-2-9
G-0331-16.8	Scorecard, DA Form 85 10m MG target	Locally reproduced 6920-00-078-5128
G-0332-17.6	Headspace and timing gauge	4933-00-535-1217
G-0332-17.7	10m MG target	6920-00-078-5128
G-0332-17.8	Limiting stakes	Field expedient
G-0332-17.10	Scorecard, DA Form 3867-R, 1 Jun 72 Double E silhouette target	Locally reproduced Use two single E silhouette targets, 6920-00-600-6874 4933-00-897-9362 4933-00-897-9362
G-0332-17.12	Extractor	Local procurement
G-0341-19.3	Waterproof covering Dunnage	Field expedient Field expedient
G-0341-19.5	Combustible material Matches	Local procurement
G-0341-19.6	1:50,000 scale military map Compass, lensatic Binoculars M13A1, 6x30 AN/PRC 77 field radio	Local procurement 6605-00-846-7618 6650-00-530-0973 TAM No. A2050
G-0341-19.7	Firing tables, M224	Packaged with ammunition
G-0341-19.9	Screwdriver, flat tip	5120-00-596-7809
G-0341-19.10	Compass, lensatic	6605-00-846-7618
G-0341-19.11	Compass, lensatic	6605-00-846-7618
G-0341-19.17	Firing tables, M224	Packaged with ammunition
	Board, plotting, M-16, W/E 1:50,000 scale military map	1220-00-602-7941 Local procurement
G-0341-20.3	Waterproof covering Dunnage	Local procurement Field expedient
G-0341-20.5	Combustible material Matches	Field expedient Local procurement
G-0341-20.7	Screwdriver, flat tip Compass, M2	5120-00-596-7809 1290-00-335-4972
G-0341-20.8	Compass, M2	1290-00-335-4972
G-0341-20.12	Firing tables, 81mm Board, plotting, M-16, W/E 1:50,000 scale military map	FT-81-AB-2 1220-00-602-7941 Local procurement

TASK NUMBER	TRAINING DEVICE	NSN
G-0341-20.14	Firing Data sheet Computer sheet	DA Form 2188-R, U.S. Army DA Form 2399-R, U.S. Army
G-0351-21.3	Launch effects trainer (LET) Field handling trainer (FHT)	6920-00-175-6327 6920-00-339-1042
G-0351-22.3	Target, 1mx2m Trainer, assault rocket, 83mm (SMAW) Mk 27 MOD 0	Locally constructed
G-0351-22.4 (Trng obj 2)	Trainer, assault rocket 83mm (SMAW), Mk 27 MOD	
G-0352-23.2	Enamel olive drab No. 24087	8010-01-031-1273
G-0369-25.1	S-3 worksheets Journal file	Local procurement Local procurement
G-0369-25.2	1:50,000 scale military map Overlay paper	Local procurement Local procurement
G-0369-25.3	S-2 worksheets S-3 worksheets	Local procurement Local procurement
G-0369-25.4	Joint Message Form	DD Form 173
G-0369-25.5	Journal sheets	Local procurement
G-0369-26.1	1:50,000 scale military map Compass, lensatic Binoculars, M13A1, 6x30 AN/PRC-77 field radio	Local procurement 6605-00-846-7618 6650-00-530-0973 TAM No. A2050
G-0369-26.2	Compass, M2	1290-00-335-4972
G-0369-27.1	1:50,000 scale military map Compass, lensatic Minefield record form Stakes	Local procurement 6605-00-846-7618 DA Form 1335-1-R Local procurement
G-03XX-28.1	Crimper, blasting cap Tape, pressure sensitive String	5100-00-029-0683 7510-00-027-3327 Local procurement
G-03XX-28.2	Crimper, blasting cap String	5100-00-029-0683 Local procurement
G-03XX-28.3	Crimper, blasting cap Blasting cap test set, M51 Galvanometer Firing wire	5100-00-029-0683 6625-00-999-3454 6625-00-539-8444 6145-00-542-3968
G-03XX-28.4	Crimper, blasting cap Firing wire Blasting cap test set, M51 Galvanometer Blasting machine	5100-00-029-0683 6145-00-542-3968 6625-00-999-3454 6625-00-539-8444 1375-00-057-7094

AMMUNITION

TASK NUMBER	DoDIC	NOMENCLATURE	PER ITERATION	REMARKS
G-0300-1.1	A080	Ctg 5.56mm blank	10	Does not include aggressor ammunition
G-0300-1.4	B642/ B643	Ctg HE w/fz, M224 Mortar	1	Substitute any indirect fire weapon
	A071/ A080 A059/ A080	Ctg 5.56mm ball/blank	5	Substitute any direct fire weapon
G-0300-1.5	L495	Flare, sur- face, trip	1	Substitute L599, booby trap illum
G-0300-1.10	C256	Ctg HE w/fz, 81mm mortar	5	Substitute other indirect fire weapon
G-0300-4.1	A071/ A059	Ctg 5.56mm ball	50	
G-0300-4.2	A071/ A059	Ctg 5.56mm ball	100	
G-0300-5.3	B546	Ctg 40mm, HE DP	5	Substitute B577, Practice
G-0300-5.4	B546	Ctg 40mm, HE DP	7	Substitute B577, Practice
G-0300-5.5	B546	Ctg 40mm, HE DP	7	
G-0300-7.1	H557	M72 LAW	1	Use expended LAW
G-0300-7.2	H708 and H557	35mm practice M72 LAW	7 *	Substitute H709, 35mm training
G-0300-7.3	H557	M72 LAW	1	Use expended LAW
G-0300-8.1	G881	Fragmentation grenade	1	
G-0300-8.2	G881	Fragmentation grenade	1	
G-0300-8.3	G881	Fragmentation grenade	1	
G-0300-9.1	K144 and M098	Mine, APPEARS, M18 inert	1	
G-0300-9.2	K144	Blasting cap, elec, inert	1	
	K144	Mine, APPEARS, M18 inert	1	
	M635	M1 firing device	1 or 2	
	M097	Blasting cap, nonelec, inert	1 or 2	
G-0300-9.3	K013	Mine AP, practice	1	DoDIC's are consumable and reusable components assembled to make one M8 practice mine
	K030	M8		
	K040			
	K055			

AMMUNITION

TASK NUMBER	DoDIC	NOMENCLATURE	PER ITERATION	REMARKS
G-0300-9.4	K270 K271 and K280 K002, K231 and K051	Mine, AT practice	1	DoDIC's are consumable and reusable components assembled to make oneqt M18 practice AT mine
G-0300-9.5	M097	Blasting cap, nonelec Time blasting fuze	1	
	M670	Fuze igniter		5ft
G-0311-14.5	Class V	requirements are a local determination	1	
G-0311-15.1	A064	Ctg 5.56mm, linked	12	Substitute A071/A059, ctg 5.56mm ball
G-0311-15.2	A064	Ctg 5.56mm, linked	12	Substitute A071/A059, ctg 5.56mm ball
G-0311-15.3	A064	Ctg 5.56mm, linked	114	Substitute A071/A059, ctg 5.56mm ball
G-0311-15.4	A064	Ctg 5.56mm, linked	TBD	Substitute A071/A059, ctg 5.56mm ball
G-0311-15.5	A064	Ctg 5.56mm, linked	30	Substitute A071/A059, ctg 5.56mm ball
G-0331-16.5	A131	Ctg 7.62mm, linked 4&1	6	Substitute A143, ctg 7.62mm ball when authorized
G-0331-16.8	A131	Ctg 7.62mm, linked 4&1	616	Substitute A143 ctg 7.62mm ball when authorized
G-0331-16.9	A131	Ctg 7.62mm linked	50	Substitute A143 ctg 7.62mm ball when authorized
G-0331-16.10	A135	Ctg 7.62mm, dummy	10	
G-0332-17.7	A576	Ctg cal .50, linked	6	
G-0332-17.10	A576	Ctg cal .50, linked	112 or 342	FAM fire or qualification
G-0332-17.11	A576	Ctg cal .50, linked	50	
G-0332-17.12	A560	Ctg cal .50, dummy	10	
G-0332-18.6	B542/ B571/ B480	Ctg 40mm HE DP/ HE/TP, linked	9	

AMMUNITION

TASK NUMBER	DoDIC	NOMENCLATURE	PER ITERATION	REMARKS
G-0332-18.9	B480/	Ctg 40mm TP	63	Substitute B542, HE DP or B571, HE
G-0332-18.10	B480/	M385, linked Ctg 40mm TP	50	
G-0332-18.11	B472	M385, linked Ctg 40mm dummy, linked	10	
G-0341-19.4	B642/ B643	Ctg HE, 60mm	1	
	B627	Ctg illum, 60mm	1	
	B630	Ctg smoke, 60mm	1	
G-0341-19.14	B642/ B643	Ctg HE, 60mm	5	
G-0341-19.15	B642/ B643	Ctg HE, 60mm	5	
G-0341-19.16	B642/ B643	Ctg HE, 60mm	5	
G-0341-20.4	C256	Ctg HE, 81mm	1	
	C226	Ctg illum, 81mm	1	
	C276	Ctg smoke, 81mm	1	
G-0341-20.11	C256	Ctg, HE, 81mm	1	
G-0351-21.3	G839	Ctg rifle	60	
(Trng Obj 2)		grenade, 7.62mm		
(Trng Obj 3)	PL23	DRAGON round	1	
G-0351-22.3	AX11	Ctg, 9mm,	6	
		spotting rifle		
(Trng Obj 2)	LX21	Simulator, noise	1	
	HX05	Rocket (SMAW),		
	or	assault, encased,		
	HX04	83mm, dual mode		
		w/9mm spotter-		
		tracers		
G-0351-22.4	AX10	Dummy cartridge,	2	
(Trng Obj 1)		9mm, spotting		
		rifle		
(Trng Obj 2)	LX20	Dummy simulator,	1	
		noise		
G-0351-22.5	HX05	Rocket (SMAW),	1	
	or	assault, encased,		
	HX04	83mm, w/9mm		
		spotter-tracers		
G-0352-23.6	L367	Missile simulation	1	
(Trng Obj 1)	and	round and TOW basic		
	VX94	blast simulator	30	
(Trng Obj 2)	PA66	TOW (live warhead)		
	or			
	PA67	TOW (inert)		

AMMUNITION

TASK NUMBER	DoDIC	NOMENCLATURE	PER ITERATION	REMARKS
G-0352-23.7	L367	Missile simulation round	1	
G-0369-27.1	K280 and/ or K231	Body, APPEARS mine, M8 practice and/ or mine, AT, practice		Number of each type of of practice mine is a local determination
G-03XX-28.1	M030 M456 M131	1/4 lb demo block detonating cord nonelec blasting cap	1 2ft 1	
	M670 M766	time blasting fuze fuze igniter	5ft 1	
G-03XX-28.2	M030	1/4 lb demo block	1	
	M131	nonelec blasting cap	1	
	M670	time blasting fuze	5ft	
	M766	fuze igniter	1	
G-03XX-28.3	M030	1/4 lb demo block	1 1	
	M130	elec blasting cap	1	
G-03XX-28.4	M030 and M131	1/4 lb demo block	1	
	M670	nonelec blasting cap	1	
	M766 or M130	time blasting fuze, fuze igniter	5ft 1	
		elec blasting cap	1	
G-03XX-29.3	A475	Ctg cal .45 ball	160	Rounds not against unit allocation

PART II
BATTLE DRILLS

Section II: PREPARE

	Page
Drill 1: PREPARE FOR COMBAT OPERATIONS	50
NOTE: All tasks listed in bold type are supported by a Job Aid.	

DRILL 1: PREPARE FOR COMBAT OPERATIONS
UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARDS:

TASK NUMBER

Estimate Situation	G-0311-14.1
Prepare and Issue Operation Order	G-0311-14.2
Plan Patrols	G-0311-14.3
Prepare Terrain Sketches/Models	G-0300-1.11
BZO Service Rifle	E-ES-09.04
Inspect M203 Grenade Launcher	G-0300-5.1
Zero Grenade Launcher	G-0300-5.3
Inspect SAW	G-0300-6.1
Field Zero SAW	G-0311-15.2
Zero SAW	G-0311-15.1
Inspect HandGrenade	G-0300-8.1
Inspect M60 Machinegun	G-0331-16.1
Zero M60 Machinegun	G-0331-16.4
Inspect M2 Machinegun	G-0332-17.1
Zero M2 Machinegun	G-0332-17.7
Inspect MK19 Machinegun	G-0332-18.1
Zero MK19 Machinegun	G-0332-18.6
Inspect 60mm Mortar	G-0341-19.1
Inspect 81mm Mortar	G-0341-20.1
Inspect SMAW	G-0351-22.1
Inspect TOW	G-0353-23.1
Inspect Service Pistol	G-03XX-29.1
Call For/Adjust Indirect Fire	G-0300-1.10
Send Radio Message	G-0300-10.7
Authenticate, Encode, and Decode Message	G-0300-10.8
Install Telephone Set	G-0300-10.1
Maintain Telephone Set	G-0300-10.2
Repair Field Wire	G-0300-10.3
Maintain Radio Set	G-0300-10.4
Operate Radio Set	G-0300-10.5
Operate Radio in Secure Voice Mode	G-0300-10.6
Construct Expedient Antenna	G-0300-10.9
Take Immediate Action (Radio)	G-0300-10.10
Establish Landing Zone	G-0300-1.7
Direct Helicopter Landing/Takeoff	G-0300-1.8

DRILL 1: PREPARE FOR COMBAT OPERATIONS (Continued)
UNIT: SQUAD/PLATOON

ACTIONS:

1. Platoon commander receives higher echelon order and issues warning order.
2. Platoon commander formulates a tentative plan based upon the operational mission.
3. Platoon commander selects and considers one or more of the *movement* and/or *environmental* conditions to support the operation in developing the 5-paragraph order mission:

MOVEMENT CONDITIONS:

See pages 25 through 26 for considerations and procedures if any of the following conditions are to be used during the drill:

Waterborne
 Heliborne
 Mounted/Dismounted
 Foot March

ENVIRONMENTAL CONDITIONS:

See pages 27 through 36 for considerations and procedures if any of the following conditions are to be used during the drill:

Night
 Nuclear, Biological, and Chemical
 Cold Weather
 Mountain
 Jungle
 Desert

4. Select Training Areas/Range (see pages 37 through 42).
5. Select Equipment and Ammunition required to support the mission (see pages 43 through 49).
6. All members perform maintenance and functional checks on their assigned weapons, night vision devices, and NBC equipment.
7. Leader checks all communication equipment.
8. Leader obtains communications-electronics operation instructions (CEOI).
9. Leader inspects personnel and equipment and receives a back-brief from subordinate leaders on their part of the operation.
10. All members camouflage themselves and their individual equipment.
11. Leader conducts rehearsals.
12. The unit is prepared to move by the time specified.

PART II

PART II

BATTLE DRILLS

Section III: MOVE		Page
Drill 2:	CONDUCT MOVEMENT TECHNIQUES	52
Drill 3:	ESTABLISH AN ENROUTE RALLY POINT	53
Drill 4:	REACT TO INDIRECT FIRE	54
Drill 5:	ESTABLISH A HASTY FIGHTING POSITION	55
Drill 6:	CROSS A DANGER AREA (LINEAR, OPEN)	56
Drill 7:	REACT TO AMBUSH	59
Drill 8:	CONDUCT A HASTY AMBUSH	60
Drill 9:	REACT TO AIR ATTACK	62
Drill 10:	ESTABLISH AN OBJECTIVE RALLY POINT (ORP)	64
Drill 11:	CONDUCT RECONNAISSANCE OF AN OBJECTIVE	65
Drill 12:	CONDUCT ZONE RECONNAISSANCE	69
Drill 13:	CONDUCT TUNNEL RECONNAISSANCE	71
Drill 14:	CONDUCT PASSAGE OF FRIENDLY LINES	72
Drill 15:	BREAK CONTACT	74

NOTE: All tasks listed in **bold type** are supported by a Job Aid.

DRILL 2: CONDUCT MOVEMENT TECHNIQUES
UNIT: (SQUAD/PLATOON)

INDIVIDUAL TRAINING STANDARDS:	TASK NUMBER
Navigate Using Compass	G-0300-11.1
Navigate Using Map	G-0300-11.2
Navigate Using Maps and Compass	G-0300-11.3
Control Unit Movement When Not in Combat	G-0300-1.9
Move Individually	G-0300-1.1
Move in Combat Formations	G-0300-1.2
Identify Manmade Features on a Map	E-ES-09.01
Identify Natural Terrain Features on a Map	E-ES-09.02
Orient a Map by Terrain Association	E-ES-09.03
Determine Six-Digit Coordinate of a Point	E-ES-09.04

ACTIONS:

- *1. Platoon commander receives higher echelon order and issues warning order.
 - *2. Platoon commanders/squad leaders formulate a tentative plan based upon the commander's intent or scheme of maneuver.
 3. All members camouflage themselves and their individual equipment.
 4. Unit members maintain visual contact at a normal interval of 10 meters (interval can expand and contract based on terrain and visibility).
 5. Unit members maintain noise and light discipline throughout movement.
 6. Each unit member observes the sector of responsibility assigned by his leader.
 7. Unit members react as their leaders do (that is, when he gets down, they get down).
 - *8. Leaders position themselves where they can best control movement.
 - *9. Leaders position personnel carrying key weapons where they can best control them (usually close by to employ them quickly).
 10. The leader navigates the patrol on the routes that best conceal movement from enemy observation and provide cover from direct enemy fire.
 11. Unit formations are closed when moving through obstructions to movement and control (that is, darkness, smoke, heavy brush, narrow passes, minefields, etc.).
- *Leader tasks

DRILL 3: ESTABLISH AN ENROUTE RALLY POINT
UNIT: PLATOON/SQUAD

INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

- *1. Leader designates enroute rally points every 100-500 meters (terrain dictates distance) during movement.
- *2. Leader orders unit to move to **last rally point** when enemy contact has disorganized the unit.
- 3. Marines rapidly move to the **last designated rally point** (if enemy activity precludes the use of last rally point, the one previously designated is used).
- 4. Upon arrival at rally point, senior man takes charge of unit immediately.
- 5. Unit establishes 360-degree security immediately.
- *6. Leader/senior man takes accountability for personnel and equipment.
- *7. Leader/senior man reorganizes unit and establishes a new chain of command (if needed).
- 8. Unit redistributes ammunition and equipment as required.
- 9. Unit waits for stragglers for the time designated in the OPORD (e.g., 1 hour) before leaving rally point.
- *10. Leader/senior man attempts to contact higher headquarters to render SITREP and request further instructions.
- 11. Leader/senior man ensures that any changes in original plan are disseminated to all members.
- 12. Unit continues mission (unless ordered otherwise).
- * Leader tasks

DRILL 4: REACT TO INDIRECT FIRE
UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARD:

TASK NUMBER

React to Indirect Fire

E-ES-10.05

ACTIONS:

1. Any member of the platoon gives warning, "INCOMING!" (Note that the nearby impact of indirect fires also starts this drill).
- *2. The leader designates direction and distance for unit to move out of the impact area ("3 o'clock, 100 meters").
3. Platoon runs out of the impact area in the direction indicated and for the indicated distance.
4. Platoon establishes immediate security at designated rally point.
- *5. Leaders account for personnel and equipment.
- *6. Squad leaders report to the platoon commander.
- *7. The platoon commander submits a shelling report (SHELREP)/mortar bombing report (MORTREP).
8. The platoon continues the mission.

***Leader tasks**

DRILL 5: ESTABLISH A HASTY FIGHTING POSITION
UNIT: SQUAD/PLATOON



INDIVIDUAL TRAINING STANDARD:

TASK NUMBER

Camouflage Person and Individual Equipment

E-ES-10.03

ACTIONS:

1. Squad/platoon stops in a *covered* and *concealed* position.

*2. Leaders, with security and communications, conduct reconnaissance of tentative position.

*3. Leaders designate sectors and general locations for the observation post (OP), listening post (LP), M60s/SAWs, and Dragons.
 (See Drill 28, Occupy/Prepare and Defend a Defensive Position.)

(At night, the designation of positions will have to be more exact. Leaders may choose to recon the area first, position the OP/LP, and then have guides bring the other members into position.)

*4. Leader commands, "MOVE OUT."

5. Designated security/OP team moves to a position to provide early warning and close-in security.

6. The M60/SAW gunners and assistant gunners move out to establish a hasty fighting position in the assigned sector.

*7. Team leaders and Dragon gunners move out and establish hasty fighting positions.

*8. Leaders rapidly check positions selected by platoon members.

9. The drill ends when all platoon members are in position.

(At this point, the platoon commander may begin a more deliberate defense in accordance with *Drill 28, Occupy, Prepare, and Defend a Defensive Position*. He will select exact fighting positions, coordinate with adjacent squads, and so forth. The platoon members will begin to prepare their positions in accordance with the order of work in the unit SOP.)

*Leader task

DRILL 6: CROSS A DANGER AREA (LINEAR, OPEN)
UNIT: SQUAD

INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

1. Once a point man observes danger area to his front, he signals "*danger area*" which is relayed throughout the entire squad. Squad halts and maintains local security.
- *2. Squad leader moves forward to the point man and confirms danger area.
- *3. Squad leader informs all squad members of the location of rally points on the near and the far side of the danger area.
- *4. Squad leader directs emplacement of near-side security. (See Operational Techniques 1 and 2, on following page.)
- *5. Squad leader reconnoiters danger area and selects crossing point which provides the most cover and concealment to crossing members.
- *6. Squad leader selects far-side clearing method based on observable terrain. (See Operational Techniques on following page.)
7. Near-side security team observes to flanks and overwatches crossing of far-side security team.
8. Once near-side security team is in place, squad leader directs far-side security team to cross danger area.
9. Far-side security team clears far side and ensures that any terrain (small hills, folds, streambeds) which might conceal enemy positions are clear. (See Operational Techniques 3.)
- *10. Far-side security team leader emplaces an observation post forward of the cleared area.
- *11. Far-side security team leader signals to squad leader that area is clear.
12. Near-side security team overwatches crossing of squad.
13. The unit crosses the danger area quickly and quietly using the method selected by the squad leader (*all at once, in pairs, one man at a time*).
14. Once across the danger area, the main body establishes local security.

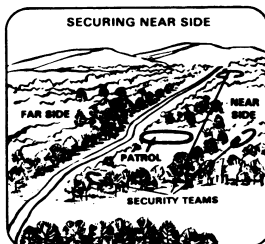
15. Near-side security team crosses danger area and regains its positions in the formation.

*16. Squad leader ensures that all members are accounted for, calls in OP, and resumes movement.

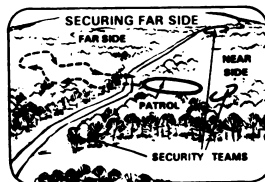
*Leader task

OPERATIONAL TECHNIQUES

1. Squad leader signals security team leader to position left, right, and rear security personnel (may be one to two-man positions, depending on number of personnel available and terrain).

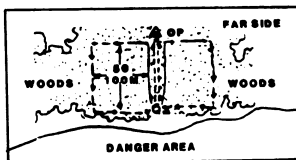


2. If danger area is narrow or observation (enemy) of crossing site is limited, squad leader establishes hasty defensive perimeter with patrol.

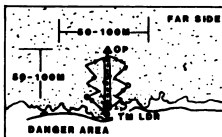


3. Far-side security team clears far side using (far-side security team size may vary due to terrain, patrol size, and so forth):

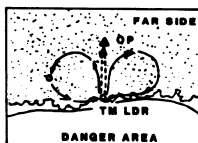
a. *Box method.* Successive boxes with two men, simultaneous with four men. Usually done when terrain is more open and larger area must be cleared.



b. *Zigzag method.* Used in denser vegetation, covers more of the immediate area.



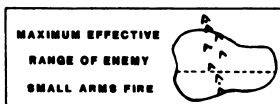
c. *Heart method.* Can be successive or simultaneous. Takes less time than other methods.



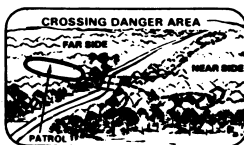
4. Large open area

a. Squad begins movement across the open area using *successive bounds*.

b. Once the lead fire team comes within maximum effective range of small arms fire from the far side, the squad moves using *alternating bounds*.



c. Once the squad reaches the far side, they assume original movement formation.

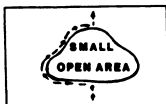


5. Small open area. Squad can bypass small open area using one of two methods:

a. *Detour bypass method*



b. *Contour bypass method*



DRILL 7: REACT TO AMBUSH
UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARD:

TASK NUMBER

React to Direct Fire

E-ES-10.04

ACTIONS:

1. *Near ambush* (within handgrenade range).

a. Men in the kill zone, without order or signal, immediately assume the prone position and throw smoke and fragmentation grenades at the ambush position.

b. Men in the kill zone assault through the ambush using techniques applicable to the terrain and effectiveness of enemy fire (ranging from fire and movement to crawling).

c. Men not in the kill zone immediately place the highest possible volume of suppressive fire against the ambush force; fire is shifted when the force in the kill zone begins to attack.

*d. The attack is continued to eliminate the ambush or to break contact as directed by the leader.

*e. Leaders reorganize the squad/platoon upon breaking through the ambush.

2. *Far ambush* (out of handgrenade range).

a. Men in the kill zone, without order or signal, assume the prone position and immediately return fire, taking the best available position, and continue firing well-aimed fire at the ambush position.

b. Men not in the kill zone conduct Drill 16, *Acquire Targets and Distribute Fire* and Drill 17, *Conduct Fire and Movement*.

c. The attack is continued to eliminate the ambush or to break contact, as directed by the leader.

*d. Leaders reorganize the squad/platoon upon breaking through the ambush.

*e. Leader requests *indirect fire* when enemy withdraws or separation between the elements is sufficient to avoid friendly casualties. Smoke is used to impair enemy observation.

* Leader tasks

DRILL 8: CONDUCT A HASTY AMBUSH
UNIT: SQUAD/PLATOON



INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

1. A platoon member, using visual signals, alerts the leader and platoon members that the enemy is in sight and gives the enemy's direction from the platoon.
2. Platoon halts and remains motionless.
- *3. The leader decides to conduct a hasty ambush and gives arm-and-hand signals.
- *4. Leaders relay signals to platoon members.
- *5. The leader emplaces the M60s/SAWs and Dragons based on the following considerations:
 - a. M60s/SAWs. Emplace in a covered and concealed position that provides maximum enfilading fire in the kill zone, grazing fire (if possible), and covers as much of the platoon front as possible.
 - b. M47 Dragons. Emplace in a covered and concealed position with a clear backblast area, and clear fields of fire that are not over powerlines or large bodies of water. Ensure *minimum* arming distance of 65 meters to target.
- *6. Leaders position platoon members in hasty fighting positions which provide observation and fields of fire on the enemy.
- *7. The leader emplaces flank security, if possible.
- *8. The leader initiates the ambush with his highest casualty-producing weapon. He initiates the ambush when the largest percentage of enemy is in the kill zone.
- * Leader tasks

- *9. Leaders control rate and distribution of fire.
 - *10. The leader orders cease fire.
 - 11. Designated platoon members conduct a *hasty search* of enemy soldiers.
 - *12. The leader reports to his superiors.
 - 13. The platoon or squad withdraws quietly from the ambush site using covered and concealed route and continues its mission.
- * Leader tasks

OPERATIONAL TECHNIQUES

1. Platoon members' positions on line are 5 to 10 meters apart. Positions allow observation of the enemy, provide fields of fire on the enemy, and provide (in order of preference):
 - a. Cover and concealment
 - b. Cover only
 - c. Concealment only
2. If any member of platoon is detected, the first man initiates the ambush by firing and notifying rest of platoon, "Enemy (right, left, front)."
3. If enemy force is too large, the ambush is not initiated unless platoon is detected. If enemy does not detect platoon, platoon allows enemy to pass, then platoon continues the mission.

DRILL 9: REACT TO AIR ATTACK
UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

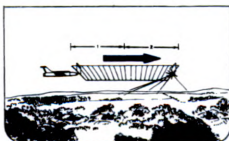
1. Any member alerts platoon of approaching aircraft; for example, "AIRCRAFT RIGHT FRONT."
2. Platoon members disperse, seek, and take up covered/concealed positions.
3. Platoon members track aircraft.
- *4. Leaders identify aircraft, recall weapons control status, and select engagement technique.
5. On order, platoon members fire at enemy aircraft (at maximum rate of fire), using appropriate operational techniques as described.
- *6. Leaders order members to cease firing.
- *7. Platoon commander reports enemy aircraft (*type, location, course*) to higher headquarters.

*** Leader tasks**

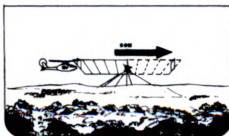
OPERATIONAL TECHNIQUES

1. Football-Field method.

- a. Lead fast-moving aircraft by 200 meters (two football field lengths).



- b. Lead helicopters by 50 meters (one-half football field length).

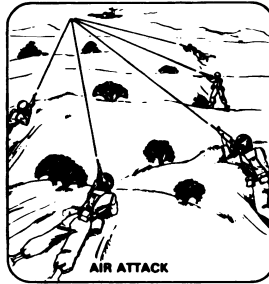


2. **Head-on method.** Engage targets flying head on by aiming slightly above aircraft nose.



3. *Target Reference-Point method.*

- a. The leader selects the reference point.
- b. As aircraft approaches reference point, platoon fires on order.
- c. Platoon members raise weapons to approximately 45-degree angle over reference point and fire.



4. **Passive-Air-Defense Techniques**

a. **Stationary**

- (1) The platoon occupies covered and concealed positions.
- (2) Positions are dispersed. Linear position patterns are not established.
- (3) Reflecting items are covered or shaded.
- (4) Leaders establish an internal air warning system.

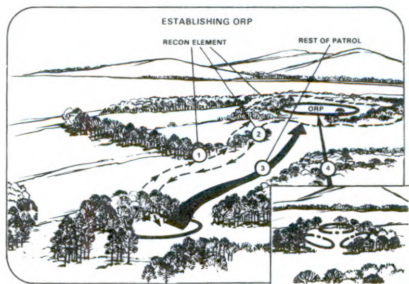
b. **Convoy movement**

- (1) Vehicles maintain interval specified in unit operation order.
- (2) Vehicles are staggered to avoid a linear pattern.
- (3) Vehicles are camouflaged; reflective items are covered.
- (4) Air guard is established on each vehicle.
- (5) Enemy aircraft are not engaged unless "ATTACKED" or ordered by higher headquarters to engage.

c. **Passive, Stationary, Covering Movement**

- (1) Unnecessary radio transmissions are avoided.
- (2) Alternate means of communications other than radio are established.
- (3) The defend-against-attack drill is rehearsed.

DRILL 10: ESTABLISH AN OBJECTIVE RALLY POINT (ORP)
UNIT: PLATOON/SQUAD



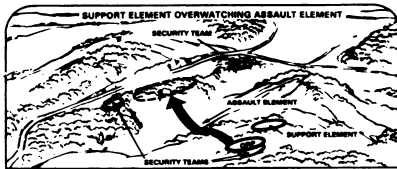
INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

- *1. Leader halts patrol 200-400 meters (*terrain dependent*) from tentative ORP.
 - *2. Unit establishes security with SAWs covering the most likely enemy avenues of approach (METT-T evaluation).
 - *3. Leader designates one squad/team leader to be in charge of unit and three men to accompany him on the leader's recon of the ORP.
 - *4. Leader informs squad/team leader remaining with unit that he is conducting leader's recon and issues him a contingency plan in case the recon element does not return.
 - *5. Leader and designated individuals depart to recon the tentative ORP.
 6. Perimeter is readjusted once the recon team has departed.
 7. ORP is reconnoitered for suitability and to ensure no enemy is near. At a minimum it must afford concealment, be easy to defend for a short period of time, be away from natural lines of drift, be easily located, and be close enough to the objective to minimize control problems (METT-T evaluation).
 8. Once ORP has been reconnoitered, security remains in the ORP while the others lead the remainder of the unit into the ORP.
 - *9. Leader at 6 o'clock position counts personnel as they move into ORP.
 - *10. Leader designates perimeter positions (METT-T evaluation).
 11. Marines re-camouflage themselves and their individual equipment.
 12. Final preparations are completed prior to conducting actions at the objective.
- * Leader tasks

DRILL 11: CONDUCT RECONNAISSANCE OF AN OBJECTIVE **UNIT: SQUAD**



INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

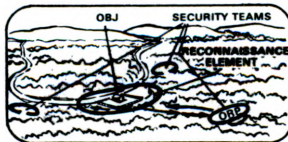
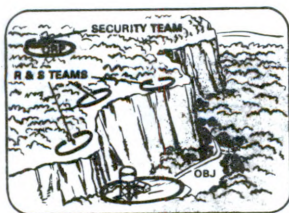
1. The squad occupies the objective rally point. (See Drill 10, *Establish an Objective Rally Point.*)
- *2. The squad leader conducts a leader's reconnaissance to confirm the objective and the plan.
- *3. The squad leader issues instructions, as necessary, in a fragmentary order.
4. The squad conducts the reconnaissance. (See Operational Techniques below.)
5. The squad returns undetected to ORP.
- *6. The squad leader disseminates information to all squad members through team leaders.
7. Squad departs ORP.

*Leader tasks

OPERATIONAL TECHNIQUES

1. The squad leader organizes his squad and conducts reconnaissance in one of two ways, depending upon terrain:

a. If the objective to be reconnoitered is restricted in area, is clearly defined, and has specific avenues of approach into the objective area, separate security and reconnaissance elements may be required.



- (1) The squad leader with RO and security element leader conduct a leader's reconnaissance of the objective and return.
- (2) The squad leader designates the positions for the security teams.
- (3) Security teams move on covered and concealed routes to their designated positions (one security team remains in ORP).
- (4) Once the security teams are in position, the reconnaissance element departs the ORP to reconnoiter objective using several surveillance/vantage points around the objective.
- (5) Once the objective has been reconnoitered, the reconnaissance element and then the security teams return to the ORP and disseminate the information.

b. If the objective to be reconnoitered is not clearly defined and located so that movement into or through the objective area by mutually supported bounds is expected, reconnaissance and security teams may be combined.

- (1) Employment of R&S teams. Reconnaissance and security teams may be employed in any size reconnaissance patrol. They may also be used in combat units in order to conduct a leader's reconnaissance. When conducting reconnaissance missions in squad-size units, you may elect to organize your squad to employ R&S teams in a number of ways. Here are several:
 - (a) One R&S team, with the remainder of squad organized as security, remains in ORP to act as a reaction force in case of enemy contact within the objective area.
 - (b) Multiple R&S teams each reconnoiter a portion of the objective and then link up at the ORP.
 - (c) Two R&S teams use ORP as a release point and then link up at a rendezvous point on the far side of the objective.

- (d) One R&S team has one security team that follows the R&S team (for example, approximately 50 meters back) to act as quick-reaction force. The entire unit will depart the objective area when the reconnaissance is complete (will not return to ORP).

(2) Security

- (a) In the R&S team technique, the reconnaissance itself can be done by one or two individuals (usually the patrol leader or team leader) and the rest of the team/squad/unit provides security. Initially, movement in the objective area is successive bounds. As the team nears an enemy position, it may be necessary to move by alternate bounds. It may become necessary to move one or two individuals at one time, while the remainder of the team covers (providing security). By moving only one or two team members at once, a team of three to five men could move just as quietly as a team of two men. The platoon commander controls this movement with appropriate arm-and-hand signals.
- (b) The number of men in an R&S team may vary according to the mission. Usually, three to five men are required to provide an adequate reconnaissance and still provide the required security. The formation used may vary according to the individual members of the R&S team. Ensure that each member understands the sector or area for which he is responsible.

2. Recon small, built-up area.

- a. Establish overwatch of reconnaissance element.
- b. Enter the town from flank or rear. If entering through flank, work your way toward the back of the town. Post through flank, work your way toward the back of the town. Post an OP with communications, then work your way through the town. Stay off streets by using yards and gardens.
- c. Check all buildings for presence or evidence of the enemy. Beware of mines and booby traps; mark all those encountered.

3. Recon a road.

- a. Assign personnel to secure key terrain on each side of the road while remainder of squad moves along the road.
- b. Recon bridges, defiles, bends, and built-up areas.
- c. Report.
 - (1) Condition, trafficability, and width of road
 - (2) Evidence of enemy or obstacles
 - (3) Bridge and ford locations and conditions
 - (4) Tunnel or underpass locations and dimensions

4. Recon a wood line.
 - a. Use concealed routes and stealth to reach the wood line and avoid contact.
 - b. Check for evidence of enemy activity such as tracks, litter, old fighting positions, mines, booby traps, and obstacles.
 - c. Determine if woods are trafficable, and check all positions from which the enemy could observe and bring fire on friendly elements in open areas.
 - d. Report findings.
5. Recon bridge.
 - a. Use concealed routes and stealth to reach the far bank; avoid contact.
 - b. Secure the far bank.
 - c. Check bridge for mines, booby traps, and demolitions.
 - d. Remove mines, booby traps, and demolitions, as required.
 - e. Classify bridge (if required).
 - f. Report condition of bridge and approaches as well as enemy activity.
6. Recon an obstacle.
 - a. Establish security and report.
 - b. Determine width of obstacles and determine bypass.
 - c. Determine type of obstacle (wire, mine, ditch, and so forth).
 - d. Conduct hasty breach, if possible.
 - e. Secure near side of obstacle for platoon breaching operation. (See Drill 25, *Breach a Minefield* and Drill 18, *Offensive Actions at the Objective*.)

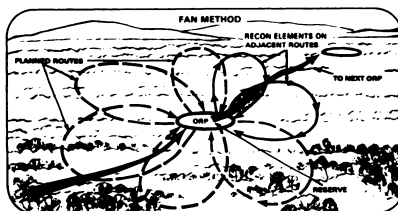
DRILL 12: CONDUCT ZONE RECONNAISSANCE
UNIT: PLATOON

INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

- *1. The platoon commander selects the ORP, method of reconnaissance, reconnaissance routes through the zone, and rendezvous point(s). (See Operational Techniques on following page.)
2. The platoon moves to the ORP and establishes local security.
- *3. The platoon commander confirms the platoon's location.
- *4. The platoon commander assigns a reconnaissance route for each squad.
- *5. The platoon commander designates the location and link-up time of the rendezvous point(s).
- *6. The platoon commander and headquarters section move with the squad reconnoitering the center route.
7. The squads recon routes using the fan method.



8. The entire platoon links up at rendezvous point(s).
9. The platoon establishes local security at rendezvous point(s).
- *10. The platoon commander disseminates the information gained to all platoon members through squad leaders at the rendezvous point.
11. The platoon returns undetected to friendly lines. (See Drill 14, *Conduct Passage of Friendly Lines*.)

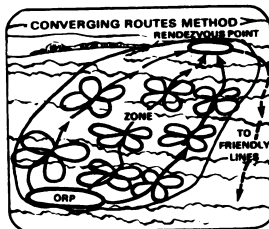
*Leader tasks

OPERATIONAL TECHNIQUES

Methods of reconnaissance include:

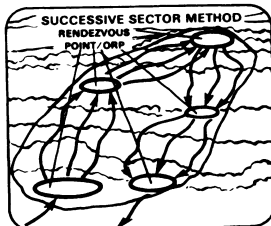
a. *Converging-routes method.*

The platoon commander first selects an ORP, then reconnaissance routes through the zone, and then selects a rendezvous point. A squad element is sent out on each route. The platoon commander normally moves with the center squad. The squads normally reconnoiter their routes using the fan method. The entire platoon links up at the rendezvous point at the designated time.



b. *Successive-sector method.*

This method is basically a continuation of the converging routes method. The platoon commander selects an ORP and a series of reconnaissance routes and rendezvous points. The actions of the platoon from each ORP to each rendezvous point are the same as in the converging-routes method. (Each rendezvous point becomes the ORP for the next phase.) When the platoon links up at a rendezvous point, the platoon commander again designates reconnaissance routes, a link-up time, and the next rendezvous point. This action continues until the entire zone has been reconnoitered. Once the reconnaissance is completed, the platoon returns to friendly lines.



DRILL 13: CONDUCT TUNNEL RECONNAISSANCE
UNIT: SQUAD

INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

1. All Marines carry protective masks, flashlights, gloves and chalk (if available).
2. If necessary for safety, each squad member is tied into a 120-foot safety rope.
3. Point man enters tunnel first and remains 10 minutes to ensure air is breathable.
4. After entire squad enters tunnel, squad leader allows time for eyes to adjust to light level before moving.
5. When a manhole to the surface is encountered, it is opened and the location checked.
6. Rear security man marks route.
- *7. Squad leader organizes patrol to include the following:
 - a. Point man
 - b. Rear Security
 - c. Stay-behind team which secures the point of entry
 - d. One grenadier to follow squad leader
 - e. One Marine to carry TAI and wire dispenser for communications
- *8. Squad leader carries map, compass, street plans and notebook to record information gathered. (See Drill 2, *Conduct Movement Techniques*.)
- *9. Leader notes azimuth and pace count of each turn in tunnel.

* Leader tasks

DRILL 14: CONDUCT PASSAGE OF FRIENDLY LINES
UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARD:

TASK NUMBER

Pass Friendly Personnel Through Lines

G-0300-2.1

ACTIONS:

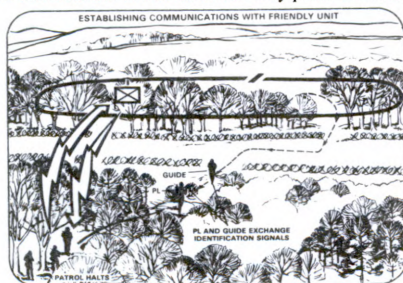
1. Departure

a. Platoon moves into the assembly area as directed by the guide.

*b. The squad leader issues a contingency plan to subordinate leaders before moving out to make final coordination.

*c. The platoon commander completes final coordination with the forward unit commander.

*d. The platoon commander indicates initial rally point on friendly side of wire.



*e. Leaders remind members of *route, azimuth, password, and pace count*, and ensure that designated personnel are prepared to perform assigned task.

f. The platoon moves to a covered and concealed position near the departure point.

*g. Leaders count members as they pass through the departure point and make sure they are on the correct compass heading.

*h. The platoon commander tells the guide the number of platoon members he has and how long to wait at the departure point, and he confirms the running password.

i. The platoon moves quickly and silently to the security halt position beyond unit's protective fires.

j. During the security halt, the platoon adjusts to sights and sounds of the battlefield.

* Leader tasks

2. Reentry

a. The platoon halts and establishes a reentry rally point.

*b. The platoon commander contacts the forward unit by radio and tells them his platoon is ready to reenter.

*c. The platoon commander issues contingency plan and moves with a security team on azimuth and pace to reentry point.

*d. The platoon commander establishes contact with the guide (far/near recognition signals).

*e. The platoon commander either signals the squad forward or goes back and leads the platoon to the reentry point.

*f. The platoon commander designates individual counts and identifies each platoon member through the reentry point.

g. The platoon follows the guide through to the assembly area.

*h. The platoon commander reports to CP of forward friendly unit and tells commander anything which is of tactical value to the commander concerning his area of responsibility.

*i. The platoon commander links up with the squad in the assembly area and leads platoon back to a secure area for debriefing.

* Leader tasks

OPERATIONAL TECHNIQUES

1. The platoon commander transmits a radio message (a prearranged code word) to tell the friendly unit that the platoon is ready to reenter.

2. If radio communications are not possible, one man contacts an OP using the challenge and password. The OP then contacts the friendly unit commander.

3. If no communications can be established and no OPs can be found, the platoon commander takes a small security team with him to reconnoiter for the reentry point.

DRILL 15: BREAK CONTACT
UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARDS:

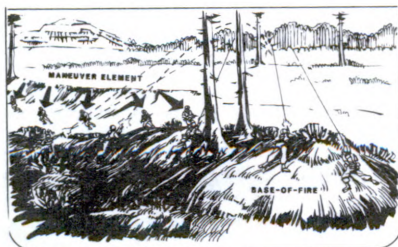
TASK NUMBER

Install/Recover or Fire M18A1 Claymore Mine
Install/Recover or Fire M18A1 Claymore Mine
(Tripwire)

G-0300-9.1
G-0300-9.2

ACTIONS:

- *1. Leaders designate rally points. See Drill 3, *Establish An Enroute Rally Point*.
- *2. Squad leaders/platoon commanders designate covered and concealed routes for movement of units to the rally point.
- 3. Base-of-fire elements deliver a high volume of well-aimed fire to cover the withdrawal of the maneuver elements.



- 4. Men remaining in position increase rate of fire to keep the enemy from overrunning the position (if the enemy is attacking).
- 5. Fire movement to the rear is repeated, as necessary, until the entire unit can break contact.
- 6. Contact may be broken by having each member of the squad throw a handgrenade or by designating one or more Claymore mines on a prearranged signal, and then disengaging by using fire and movement to the rear.
- *7. Squad leader/platoon commander ensures that movement by squad/platoon is as rapid as the situation permits (key to successfully breaking contact).
- 8. Squad/platoon elements link up at designated rally point. (See Drill 3, *Establish An Enroute Rally Point*.)
- *9. Squad leader/platoon commander moves squad/platoon from the area using a covered and concealed route and attempts to keep a terrain feature between the squad and the enemy.

*Leader tasks

PART II
BATTLE DRILLS

Section IV: SHOOT	Page
Drill 16: ACQUIRE TARGETS AND DISTRIBUTE FIRE	75
Drill 17: CONDUCT FIRE AND MOVEMENT	77
Drill 18: OFFENSIVE ACTIONS AT THE OBJECTIVE	79
Drill 19: CONDUCT A POINT AMBUSH	81
Drill 20: CONDUCT ANTIARMOR AMBUSH	83
Drill 21: KNOCK OUT A BUNKER	85
Drill 22: CLEAR A TRENCH LINE	86
Drill 23: CONDUCT INITIAL BREACH OF A MINED WIRE OBSTACLE	88
Drill 24: BREACH A MINED WIRE OBSTACLE	90
Drill 25: BREACH A MINEFIELD	91
Drill 26: CLEAR A BUILDING	94

NOTE: All tasks listed in **bold type** are supported by a Job Aid.

DRILL 16: ACQUIRE TARGETS AND DISTRIBUTE FIRE
UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARDS:

TASK NUMBER

Estimate Range	G-0300-1.4
Engage Target with Service Rifle Using Night Sight	G-0300-4.1
Engage Target with Service Rifle Using Field Firing Techniques	G-0300-4.2
Engage Target with Grenade Launcher	G-0300-5.4
Engage Target with Grenade Launcher Using Limited Visibility Techniques	G-0300-5.5
Engage Target Using Handgrenades	G-0300-8.3
Engage Target with M60 Machinegun	G-0331-16.8
Engage Target with M60 Machinegun Using Night Vision Sight	G-0331-16.9
Take Immediate Action (M60 Machinegun)	G-0331-16.10
Engage Target with SAW	G-0311-15.3
Engage Target with SAW Using Night Vision Sight	G-0311-15.4
Engage Target with SAW Using Limited Visibility Techniques	G-0311-15.5
Engage Target with MK19 Machinegun	G-0332-18.9
Engage Target with M2 Machinegun	G-0332-17.10
Take Immediate Action (MK19 Machinegun)	G-0332-18.11
Engage Target with Dragon	G-0351-21.3
Take Immediate Action (Dragon)	G-0351-21.4
Engage Target with SMAW	G-0351-22.3
Engage Target with SMAW Using Night Vision Sight	G-0351-22.5
Engage Target with TOW	G-0352-23.6
Take Immediate Action (TOW)	G-0352-23.7
Engage Target with Service Pistol	G-03XX-29.3
Take Immediate Action (Service Pistol)	G-03XX-29.4
Control Unit Fires	G-0311-14.5

ACTIONS:

1. Platoon members scan sectors of responsibility and acquire targets. (See Operational Techniques on following page.)
2. Platoon members engage or report targets in accordance with SOP/OPORD.
 - a. Platoon members fire only in assigned sectors of fire unless ordered by leader to do otherwise.
 - b. If rifleman is firing at a target out of his assigned sector and detects a target in his sector, he shifts fire without orders.
 - c. M60s/SAWs and grenadiers engage enemy automatic weapons anywhere within the platoon's sector (controlled by leader).
 - d. M60s/SAWs work together; when one stops firing, the other starts (controlled by leader).

- e. Individuals within buddy teams do not reload at the same time.
- f. When firing final protective fire, use maximum rate of fire.
- 3. Platoon members alert leaders and other platoon members of enemy location(s).
- *4. The leader assesses the situation, designates targets, weapons, and engagement techniques to be used against them. (See Operational Techniques below.)
- *5. Platoon members engage targets according to commands.
- *6. As additional targets appear, leaders shift fire, as needed, to engage them.
- *7. As situation changes, leaders move individuals where they can be most effective.
- *8. Leaders report situation throughout engagement to higher CP.
- * Leader tasks

OPERATIONAL TECHNIQUES

- 1. Target Acquisition Techniques
 - a. Straight lines (unnatural)
 - b. Tracks or other evidence of activity
 - c. Broken foliage or foliage that does not match



- d. Movement
- e. Glare or shine
- f. Smoke, flash, or dust
- g. Vehicle and personnel movement noises
- h. Metal-on-metal noises

DRILL 17: CONDUCT FIRE AND MOVEMENT

UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARDS:

TASK NUMBER

Estimate Situation

G-0311-14.1

Control Unit Fires

G-0311-14.5

ACTIONS:

- *1. The leader designates a base-of-fire element and a maneuver element.
 - *2. The leader selects covered and concealed route for maneuver element and primary direction of fire.
 3. The base-of-fire element delivers continuous, well-aimed fire on the enemy position while the maneuver element moves.
 4. The maneuver element moves, without masking the base-of-fire element's suppressive fires, to the last covered and concealed position before the assault (under control of squad/platoon commander).
 5. The fire teams assault aggressively, delivering a heavy volume of sustained, accurate fire on the objective.
 - *6. Squad leader/platoon commander signals lift or shift of suppressive fires and uses smoke to conceal the final assault. (See Operational Techniques on following page.)
 7. Base-of-fire elements lift or shift fires (left, right, beyond objective to other known enemy positions).
 8. Maneuver element fights through to the far side of the objective and destroys the enemy.
 9. Base of fire element moves to objective.
 10. Squad/platoon consolidates and reorganizes. (See Drill 27, *Consolidate and Reorganize*.)
 - *11. Squad leader/platoon commander reports to higher headquarters.
- * Leader tasks

OPERATIONAL TECHNIQUES

1. Smoke Applications

a. Place smoke on or near enemy position to interfere with his observation and fire. Smoke is usually delivered by indirect fire from artillery and/or mortar shell. Smoke near enemy weapons may reduce his effectiveness by 75 percent.

b. Use smoke to screen friendly movement and positions.

c. Use smoke for marking enemy positions, reference points, and unit locations. Smoke also may be used to signal execution or termination of battlefield actions.

d. Use smoke to deceive the enemy of your actions or intentions.

2. Smoke Effects

a. *Psychological.* Due to lack of visibility, personnel operating in smoke may develop fear or anxiety because they cannot detect the enemy, see adjacent units, or distinguish terrain features. Smoke tends to isolate units, individuals, or groups, thus degrading their ability to fight. To overcome these anxieties, troops should be informed that screening smoke near friendly positions will reduce enemy observation and effective fire.

b. *Physiological.* Extended exposure to large concentrations of smoke may cause shortness of breath, inflammation of the respiratory system, dizziness, vertigo, or vomiting.

c. *Operational Factors.* Smoke degrades the unit's ability to maneuver, fight, and visually communicate. It slows movement and coordination effort.

3. Smoke Countermeasures

a. Detailed plans must be made and disseminated.

b. A detailed reconnaissance of the area must be carried out using all available resources, radar, aerial photographs, and maps.

c. During movement, terrain features, wood lines, river beds, and manmade features can be used as guides.

d. Use thermal imagery sights to see through smoke.

e. Practice in a smoke environment.

DRILL 18: OFFENSIVE ACTIONS AT THE OBJECTIVE
UNIT: PLATOON

INDIVIDUAL TRAINING STANDARDS:

TASK NUMBER

Call For/Adjust Indirect Fire
Process Known or Suspected Enemy Personnel
Direct Airstrike

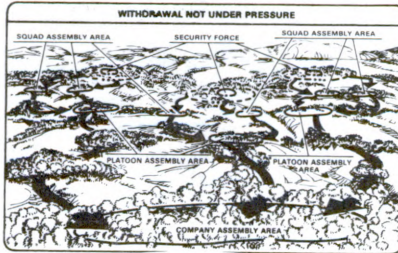
G-0300-1.10
G-0300-2.3
G-0369-24.1

ACTIONS:

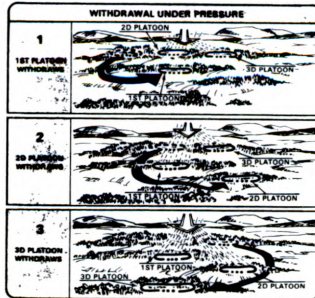
- *1. The platoon commander designates elements/teams that include required special teams (demolition, prisoner of war search, etc.).
 - *2. The platoon sergeant controls the support element.
 - *3. The platoon commander conducts reconnaissance of objective.
 - 4. Security element moves into position according to the platoon commander's order to cover likely enemy avenues of approach.
 - 5. The security element leader keeps the platoon commander informed of any enemy activity.
 - *6. The platoon commander initiates the attack by directing the fire of his highest casualty-producing weapon.
 - *7. The platoon commander requests suppressive/obscuration fires on known and suspected enemy positions.
 - *8. The platoon commander directs lift or shift of support element fires before assault.
 - 9. The assault element, to include special teams (demolition, search POW), fights through the objective using individual movement techniques.
 - 10. The assault element secures the objective and protects the special teams.
 - 11. The special teams accomplish all assigned tasks. (See Operational Techniques on following page).
 - *12. The platoon commander directs the withdrawal from the objectives area.
- * Leader tasks

OPERATIONAL TECHNIQUES

1. The platoon withdraws from the objective area by elements. Security elements remain in position while assault and support elements withdraw to objective rally point (ORP). This method is used when greater security is required after the raid.



2. The platoon conducts simultaneous withdrawal (*all elements begin to move at the same time*). This method is used when speed is needed more than security. A link-up point can be the support element's position which then can be used to overwatch the withdrawal.



DRILL 19: CONDUCT A POINT AMBUSH
UNIT: PLATOON

INDIVIDUAL TRAINING STANDARDS:

TASK NUMBER

Install and Fire or Recover M18A1 Claymore Mine
Install and Recover M18A1 Claymore with Tripwire(s)
Install and Recover M16A1 Antipersonnel Mine
Process Known or Suspected Enemy Personnel

G-0300-9.1
G-0300-9.2
G-0300-9.3
G-0300-2.3

ACTIONS:

- *1. Platoon commander designates assault element, support element, and security element.
- *2. Platoon commander and element leaders, accompanied by the radio operator (RO) and security personnel, conduct leader's reconnaissance of the proposed ambush site to confirm the plan and return to the ORP.
- 3. Security element departs ORP and moves to designated positions where they can secure the ORP and the flanks of the ambush site. (See Operational Techniques on following page.)
- *4. Once security teams are in position or on order of platoon commander, the support and assault elements depart the ORP and occupy their positions. (See Operational Techniques on following page.)
- 5. All platoon members remain motionless and employ noise and light discipline until enemy appears in kill zone.
- 6. Upon observing the enemy, the security team spotting it alerts the platoon commander; as a minimum, report direction of movement, size of target, and any special weapons and equipment carried.
- *7. Upon receipt of the report, platoon commander alerts other elements.
- *8. When the majority of the enemy are in the kill zone, platoon commander initiates ambush using the highest casualty-producing weapon (preferably, M60/SAW or the detonation of mines or explosives).
- 9. Assault and support elements deliver fire with the heaviest, most accurate volume possible.
- *10. Platoon commander gives signal to lift or shift fires if the target is to be assaulted.

*Leader tasks

11. Support element immediately lifts or shifts, and the assault element assaults before the enemy can react.

12. Specialty teams (demolition, aid/litter, search and seizure/enemy POW) accomplish their assigned tasks immediately after assault.

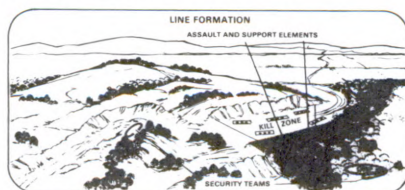
*13. Platoon commander gives signal to withdraw and platoon withdraws to ORP, reorganizes, and begins its return march toward friendly lines.

14. Platoon halts at least one terrain feature away and disseminates information.

OPERATIONAL TECHNIQUES

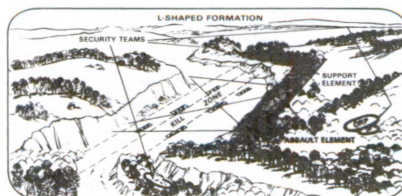
The platoon commander may use one of two formations:

a. Line formation. The assault and support elements are deployed parallel to the target's route of movement (road, trail, stream). Assault elements emplace mine to effectively cover the designated kill zone. Security personnel will conduct search of enemy personnel. An advantage of this formation is the relative ease by which it can be controlled under all conditions of visibility.



b. L-shaped formation. The long leg of the "L" (assault element) is parallel to the kill zone. The short leg of the "L" (support element) is perpendicular to the kill zone. Assault elements emplace mines to effectively cover the designated kill zone.

Security personnel will conduct search of enemy personnel. An advantage of this formation is that it provides for both flanking and enfilade fires which interlock with each other.



* Leader tasks

DRILL 20: CONDUCT ANTIARMOR AMBUSH
UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARDS:

TASK NUMBER

Restore LAW to Carrying Configuration	G-0300-7.1
Engage Target with LAW	G-0300-7.2
Take Immediate Action	G-0300-7.3
Install and Recover M21 Antitank Mine	G-0300-9.4
Engage Target with Dragon	G-0351-21.3
Take Immediate Action (Dragon)	G-0351-21.4
Engage Target with TOW	G-0352-23.6
Take Immediate Action (TOW)	G-0352-23.7

ACTIONS:

- *1. Leader takes security with him to reconnoiter and select the kill zone.
2. Support/security teams occupy designated positions on both flanks of the kill zone where they can cover the withdrawal of the armor-killer team.
- *3. The leader assigns the armor-killer teams positions that should have:
 - a. A good field of fire into the kill zone
 - b. Cover and concealment
 - c. An obstacle between the team and the kill zone
 - d. Covered and concealed withdrawal routes
4. Designated platoon members emplace obstacles to canalize the enemy or to stop him in the kill zone, if possible. Claymore mines are placed to cover the kill zone and the squad's withdrawal routes. (See Drill 19, *Conduct A Point Ambush*.)
5. Platoon members prepare covered and concealed positions while waiting for the enemy.
- *6. The leader positions himself where he can best control his squad and weapons, normally near the Dragon.

*Leader tasks

*7. Upon enemy arrival, the leader assesses the situation and initiates the ambush. (See Operational Techniques below.)

8. Upon initiation of the ambush, the remainder of the armor-killer team opens fire with M60s/SAWs, M16s, light antitank weapons (LAW), and grenade launchers.

9. The armor-killer team employs multiple shots when using the LAW.

10. The platoon or squad destroys the enemy and withdraws to the ORP on the leader's command (use Claymore mines and smoke to cover withdrawal).

* Leader tasks

OPERATIONAL TECHNIQUES

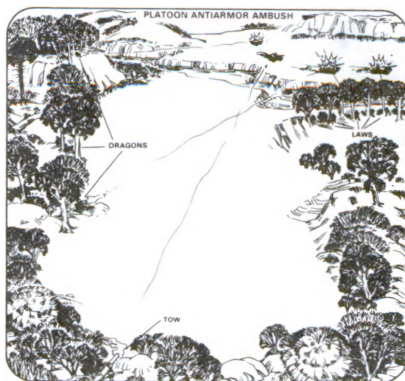
The leader initiates an ambush with:

a. A command-detonated antiarmor mine, if the enemy is entirely mounted and the mine is available.

b. M60s/SAWs and small arms fire, if enemy troops on foot precede the armored vehicles.

c. Dragon, if fields of fire are over 100 meters and mines are not available.

d. Multiple LAW fire, if fields of fire are less than 100 meters and mines are not available.



DRILL 21: KNOCK OUT A BUNKER
UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARDS:

Engage Target with SMAW
Take Immediate Action (SMAW)
Engage Target with SMAW Using Night Vision Sight
Engage Target with Handgrenade
Detonate Explosives Using Detonating Cord
Detonate Explosives Non-electrically
Detonate Explosive Electrically
Clear Demolition Misfire

TASK NUMBER

G-0351-21.3
G-0351-21.4
G-0351-22.5
G-0300-8.3
G-03XX-28.1
G-03XX-28.2
G-03XX-28.3
G-03XX-28.4

ACTIONS:

*1. On signal from the leader, the support team suppresses the bunker's apertures and the enemy's mutually supporting positions.

*2. The leader selects the best covered and concealed route to the bunker. The assault team, led by the squad leader, uses fire and movement to approach the bunker from its blind side without masking the fires of the support team.

*3. The leader directs the employment of smoke (*M203 or grenade*) to obscure the enemy's observation.

4. Upon reaching the last covered and concealed positions, Team 1 engages the bunker while Team 2 prepares to destroy the bunker with handgrenades, demolitions, or SMAW.

*5. Upon signal from the leader, the support team shifts fires to adjacent enemy positions or lifts fires.

6. Team 2 (*see figure at right*) moves to the blind side of bunker. One Marine covers the exit while another Marine throws a grenade or demolitions into the bunker.

7. After the detonation, the Marine covering the exit enters bunker, and fires short bursts within the bunker.

*8. Leader checks bunker.

*Leader tasks



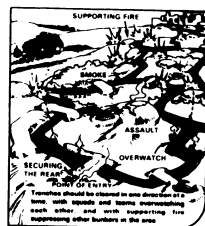
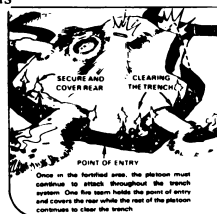
DRILL 22: CLEAR A TRENCH LINE
UNIT: PLATOON

INDIVIDUAL TRAINING STANDARDS:

(No standard identified for this drill.)

ACTIONS:

- *1. Platoon commander task-organizes platoon into clearing teams and support teams.
 2. Clearing teams move along covered and concealed route, covered by suppressive fires of support element.
 3. Clearing Team 1 moves to entry point and throws grenade (uses *cook-off method*).
 4. Clearing Team 1 enters trench after grenade explodes and secures and holds the point of entry.
 - *5. Under platoon commander control, clearing Teams 2 and 3 enter and clear the trench in one direction only.
 6. Clearing Team 2 clears along the main trench while clearing Team 3 covers connecting trenches.
 7. Each clearing team will throw a grenade around each corner and into each fighting position/bunker.
 - a. A clearing team member rounds the corner firing after the grenade explodes.
 - b. Team members alternate positions—grenade thrower, firer.
 - c. Teams maintain intervals to prevent two teams from getting caught by the same enemy fires.
 - d. Teams continue operation until their assigned sector of trench line is clear.
 - e. All bunkers will be cleared using the techniques in Drill 21, *Knock Out a Bunker*.
- * Leader tasks



OPERATIONAL TECHNIQUES

1. No unsecure trench sections are bypassed or left unsecured.
2. When connecting trench lines are encountered, the platoon commander moves forward, makes a quick estimate, and indicates the direction the teams will continue to clear toward. Since the connecting trench is not being cleared, the junction must be secured.
3. Clearing generally continues along the trench line toward the bulk of the fortification or toward command post emplacement.
4. A marker (per company SOP) is placed at the top of each trench indicating direction of clearing.
5. A marker (per company SOP) is placed on all cleared trenches and each cleared bunker.
6. Casualties
 - a. Seriously wounded casualties are left with an attendant until evacuated by follow-on forces. Attendant then rejoins clearing team.
 - b. Slightly wounded casualties either remain in position until medical help arrives, go to medical help, or continue the attack (only if slightly injured).

DRILL 23: CONDUCT INITIAL BREACH OF A MINED WIRE OBSTACLE
UNIT: SQUAD

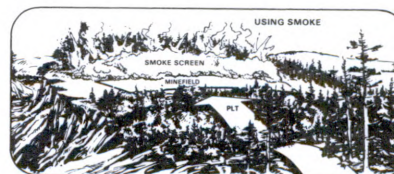
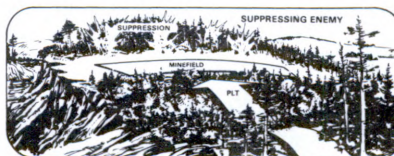
INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

- *1. The squad leader divides squad into support teams and breach team.
- *2. The squad leader designates breach point.
3. Support teams occupy overwatching position and orient weapons on, and suppress, known or likely enemy positions.
- *4. Breach area point is obscured with organic smoke (*grenades or smoke pots*) or indirect fire.
5. Breach team moves into position using available cover and concealment.
6. Breach team breaches obstacle using method chosen by squad leader. (See Operational Techniques below.)
7. Lane is marked per company SOP.
8. Breach team provides local security for the far side of the obstacle.
9. Support teams follow breach team once the far side is secured.

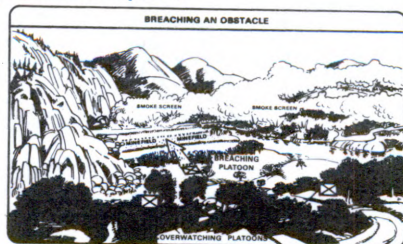
* Leader tasks



OPERATIONAL TECHNIQUES

Obstacles should be breached using one of the following techniques, depending on the equipment available to the squad:

- a. The *bangalore torpedo* comes in 10 sections, plus a nose cone, and weighs approximately 198 pounds. Each section weighs approximately 20 pounds. At least three men will be required to carry the sections, and two trips may be required. In order to prevent premature explosion of the torpedo by an exploding mine as the torpedo is pushed into place, an improvised, nonexplosive load assembly (*wooden pole/camouflage support pole*) should be placed between the last explosive load assembly and the nose sheath. As each section is attached, the torpedo is pushed further through the obstacle by one to three men, depending on the terrain. Once the bangalore is extended across the minefield, squad members move to the rear and take up *covered* and *concealed* positions.

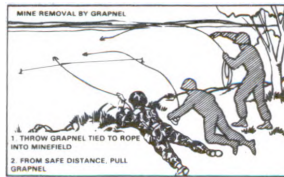


A designated individual primes the bangalore torpedo either by means of a priming adapter and a military electric or nonelectric blasting cap and timed fuse or by use of 8- or 15-second delay detonators. A designated individual detonates the bangalore torpedo.

b. *Breach team* searches for mines and booby traps and marks them. One man from breach team is on either side of cutting man to hold back the wire while he cuts. These two men then fold back the wire where it has been cut. Cutting man again searches for mines and booby traps, marking them as he goes. This process continues until obstacle is cut through.



c. One man moves to edge of obstacle equipped with rope and grappling hook. Marine hurls *grappling hook* across the minefield, making sure he throws it high enough to take cover before it lands and far enough to land on the other side of the minefield. He then pulls the grappling hook back toward his position. Procedure is repeated several times to clear a path that is wide enough for passage.



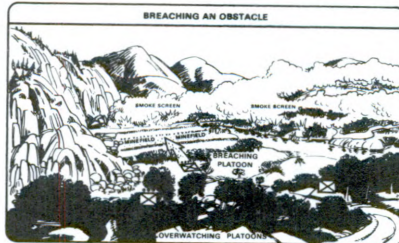
DRILL 24: BREACH A MINED WIRE OBSTACLE
UNIT: PLATOON

INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

1. Lead squad reports obstacle.
2. Lead squad occupies the best available position to overwatch the obstacle.
3. Squad members conduct visual search for possible enemy positions.
4. The remainder of the platoon takes up covered and concealed positions while platoon commander conducts leader's reconnaissance.
- *5. Platoon commander designates breaching squad and overwatch squads.
6. Platoon (-) assumes an overwatch position to support the breaching squad.



- *7. Platoon commander requests suppressive/obscuration fires on known/suspected enemy positions.
 8. On order, breaching squad conducts initial breach. (See Drill 23, *Conduct Initial Breach of a Mined Wire Obstacle.*)
 9. The breaching squad moves through the initial breach and secures the far side of the obstacle.
 10. On order, overwatching squads move through the breach and secure the far side of the obstacle.
 11. The breaching squad moves back and widens and marks the initial breach.
 12. Breaching squad rejoins the platoon.
- * Leader tasks

DRILL 25: BREACH A MINEFIELD
UNIT: PLATOON

INDIVIDUAL TRAINING STANDARD:

Neutralize Mines

TASK NUMBER

G-0300-9.5

ACTIONS:

*1. The platoon commander designates a squad to conduct the initial breach.

*2. The breaching squad leader organizes the squad into three elements:

a. Support team (squad leader, M60/SAW gunner, and M203 gunner). (See Drill 8, *Acquire Target and Distribute Fire*.)

b. Security team (team leader and M60/SAW gunner).

c. Breach team (two probes and team leader plus one man to follow and support).

*3. The breaching squad leader designates where the support team will set up on far side of minefield once the initial breach is completed.

*4. The platoon commander designates overwatch positions and sectors of fire for the platoon (-).

*5. The overwatching squad leaders position their M60/SAWs and Dragons, assign sectors of fire and principal direction of fire, ensuring that each squad member knows the location of the breach point and breaching squad.

*6. Breach team leader ensures probes prepare themselves by removing all metal from their bodies and rolling up their sleeves; brings breaching equipment forward.

* Leader tasks



7. Probers use a nonmetallic probe and clear a path *1-meter wide*.
- *8. The breaching squad leader positions the support team into a forward alternate bounds position; assigns sectors of fire and principal direction of fire.
- *9. The security team leader moves the security team to breaching point, *5 meters* on either side of where probers will begin, and takes up alternate bounds positions.
- *10. The breach team leader moves breaching team forward.
 - a. Two probers are positioned immediately next to each other.
 - b. Two follow-on support personnel (team leader plus one man) move *10 meters* behind.
 - c. First prober begins probing forward.
 - d. The second prober follows *10 meters* behind and clears *1 meter* to the right.
 - e. Follow-on support members follow *10 meters* behind each prober with marking items and prober's equipment and they should do the following:
 - (1) Pass forward marking items and other supplies.
 - (2) Move forward to replace probers at direction of breach team leader.
11. In the event of wounded personnel, security team personnel take the place of the wounded personnel, and support team withdraws wounded personnel.
- *12. If the breach team becomes ineffective, squad leader designates security team to continue the breach if the situation allows.
13. Once probers have breached minefield, they secure their gear from the follow-on support team and take up a security position *5 to 8 meters* to the left of their exit point.

* Leader tasks

*14. Breach team leader moves follow-on support members to join probers for security—push out *5 to 20 meters* (terrain-dependent) to covered and concealed positions.

*15. Breach team leader signals the squad leader to bring the remainder of the squad through the breach lane.

*16. Squad leader leads support team through and establishes security position at designated security posts.

*17. Security team leader (near side of minefield) remains at the gap, pointing the way for the platoon (-).

*18. Squad leader reports to platoon commander that the breach is completed.

*19. Platoon commander bounds remaining squads forward through the breach.

20. Platoon continues its mission.

* Leader tasks

PART II
BATTLE DRILLS

Section V. DEFEND

	Page
Drill 27: CONSOLIDATE AND REORGANIZE	95
Drill 28: OCCUPY, PREPARE, AND DEFEND A DEFENSIVE POSITION	97
Drill 29: ESTABLISH A PATROL BASE	103
Drill 30: OCCUPY/PREPARE DEFENSIVE POSITION (MOUT)	105
NOTE: All tasks listed in bold type are supported by a Job Aid	

DRILL 26: CLEAR A BUILDING

UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

*1. Support team is positioned to provide suppressive fire on the building, destroying any enemy trying to exit/enter building. (The leader determines whether the M60/SAW is with support or assault, dependent on the factors of METT.)

2. Assault team enters the building at highest possible point.

3. One buddy team clears the first room by:

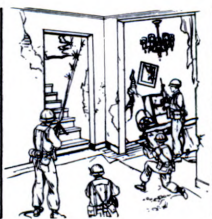
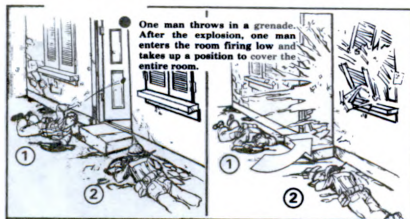
a. One Marine (*first man*) kicking or shooting the door open.

b. One Marine (*second man*) throwing a grenade into the room.

c. After the explosion, the first man rushes into the room firing weapon in two- to three-round bursts (as needed) to eliminate the remaining enemy.

d. When the room is clear, the first man yells "CLEAR"; the second man yells "COMING IN" and enters the room and conducts a quick but thorough search. If the first man does not call "CLEAR," the second man calls the first man to verify that the room is clear. If no response, the process of firing and clearing is repeated by another buddy team.

e. Once the room is cleared, the follow-on buddy team moves to clear the next room while one individual is positioned to cover the cleared room.



f. This procedure is continued until the whole floor is cleared.

g. If there are more rooms than there are personnel to cover them, cleared rooms are marked (*per unit SOP*) beginning with the first room cleared, and covering personnel leapfrog to the next room being cleared.

h. The same procedure is used on every floor until all rooms are cleared and marked.

*i. Once the entire building is cleared, it is also marked (*per unit SOP*), placed under observation, and isolated (by *fire* and/or *obstacles*) to prevent reentry by the enemy.

*Leader tasks

DRILL 27: CONSOLIDATE AND REORGANIZE
UNIT: SQUAD/PLATOON

INDIVIDUAL TRAINING STANDARDS:

TASK NUMBER

Establish Security Post	G-0311-14.4
Recommend Locations for Fighting Positions/for Crew-Served Weapons	G-0369-24.2
Collect and Report Information	G-0300-2.2
Process Known or Suspected Enemy Personnel	G-0300-2.3
Apply First Aid for Traumatic Amputation	G-0300-12.1
Apply First Aid for White Phosphorus Burns	G-0300-12.2
Improvise Stretcher	E-ES-05.02
Transport Casualty	E-ES-05.03
Perform Mouth to Mouth/Nose Resuscitation	E-ES-05.04
Treat Casualty for Shock	E-ES-05.06
Perform Chest Pressure Arm/limb Respiration	E-ES-05.05
Perform Closed Chest Heart Massage	E-ES-05.07
Apply Pressure Dressing	E-ES-05.08
Apply Tourniquet	E-ES-05.09
Splint Closed Fracture	E-ES-05.10
Splint Open Fracture	E-ES-05.11
Identify/Treat/Prevent Heat Injuries	E-ES-05.12
Apply Lifesaving Steps	E-ES-05.01
Identify/Treat/Prevent Cold Injuries	E-ES-05.13
Treat Burns	E-ES-05.17
Treat Sucking Chest Wound	E-ES-05.18
Treat Abdominal Wound	E-ES-05.19
Identify/Treat Foot Injuries	E-ES-05.14
Treat Head Injuries	E-ES-05.15
Treat Snake/Insect/Animal Bites	E-ES-05.16
Purify Water	E-ES-05.21
Maintain Personal Hygiene in a Field Environment	E-ES-05.20

ACTIONS:

- *1. Chain of command is reestablished.
- *2. The platoon commander positions observation post forward to provide security and ensures that squad members are alert for possible counterattack.
- *3. Key positions are filled in the following priority: platoon commander, M60s/SAWs, and Dragon gunner. Replacements are assigned by the same criteria.

4. Platoon members occupy hasty fighting positions. (See Drill 5, *Establish a Hasty Fighting Position.*)

*5. The leader assigns temporary sectors of fire, and subordinate leaders further break down their sectors to cover likely avenues of approach.



*6. Squad leaders report ammunition, personnel, and equipment status to platoon commander.

*7. Leaders issue and/or redistribute ammunition and equipment.

*8. The platoon commander reports status of:

- a. *Personnel*—missing in action/killed in action, key positions left open
- b. *Weapons*—amount of ammunition
- c. *Equipment*—damaged or destroyed

*9. The platoon commander requests replacement personnel, resupply, and refuel along with maintenance assistance, as needed.

10. Designated personnel search/guard enemy personnel and equipment.

11. Enemy POWs are handled according to the 5-S's.

12. Designated Marine gives first aid to casualties.

13. Casualties are evacuated to higher headquarters aid or clearing station by ground or helicopter, as available.

14. Killed-in-action casualties are evacuated to battalion. (Transport separate from wounded.)

15. The platoon prepares to defend or to continue its mission.

*Leader tasks

DRILL 28: OCCUPY, PREPARE, AND DEFEND A DEFENSIVE POSITION
UNIT: PLATOON

INDIVIDUAL TRAINING STANDARDS:	TASK NUMBER
Emplace and Fire or Recover Trip Flare	G-0300-1.5
Construct Fighting Hole	E-ES-10.01
Construct Machinegun Position (M-60)	G-0331-16.3
Construct Machinegun Position (MK-19)	G-0331-18.5
Construct Fighting Position for Dragon	G-0351-21.2
Prepare Platoon Defensive Fire Plan	G-0369-24.3
Install/Recover Hasty Protective Minefield	G-0369-27.1
Establish Landing Zone	G-0300-1.7
Direct Helicopter Landing/Takeoff	G-0300-1.8
Maintain Night Vision Sight	G-0300-3.1
Conduct Surveillance During Darkness	G-0300-3.2
Maintain Grenade Launcher	G-0300-5.2
Zero Grenade Launcher	G-0300-5.3
Maintain SAW	G-0300-6.2
Maintain Handgrenade	G-0300-8.2
Install and Fire or Recover M18A1 Claymore Mine	G-0300-9.1
Install and Recover M18A1 Claymore with Tripwire(s)	G-0300-9.2
Install and Recover or Fire M16A1 Anti-personnel Mine (with or without Tripwires)	G-0300-9.3
Install Telephone Set	G-0300-10.1
Maintain Telephone Set	G-0300-10.2
Repair Field Wire	G-0300-10.3
Maintain M60 Machinegun	G-0331-16.2
Mount and Emplace M60 Machinegun on Ground	G-0331-16.4
Lay M60 Machinegun	G-0331-16.6
Prepare Range Card	G-0331-16.7
Maintain M2 Machinegun	G-0332-17.2
Mount and Emplace M2 Machinegun on Ground	G-0332-17.3
Mount and Emplace M2 Machinegun on Vehicle	G-0332-17.5
Maintain MK19 Machinegun	G-0332-18.2
Mount and Emplace MK19 Machinegun on Ground	G-0332-18.3
Mount and Emplace MK19 Machinegun on Vehicle	G-0332-18.4
Lay MK19 Machinegun	G-0332-18.7
Maintain Night Vision Sight	G-0332-18.12
Maintain 60mm Mortar	G-0341-19.2
Store 60mm Mortar Ammo in Field	G-0341-19.3

Prepare 60mm Mortar Ammo for Firing	G-0341-19.4
Burn 60mm Mortar Increments	G-0341-19.5
Select 60mm Mortar Position	G-0341-19.6
Issue 60mm Mortar Fire Commands	G-0341-19.7
Mount 60mm Mortar	G-0341-19.8
Boresight 60mm Mortar	G-0341-19.9
Lay 60mm Mortar	G-0341-19.10
Lay 60mm Mortar Section Parallel	G-0341-19.11
Perform Safety Checks on 60mm Mortar	G-0341-19.12
Perform Actions to Fire 60mm Mortar	G-0341-19.13
Fire 60mm Mortar	G-0341-19.14
Fire 60mm Mortar in Hand-Held Mode	G-0341-19.15
Perform Actions to Fire 60mm Mortar in Hand-Held Mode	G-0341-19.16
Compute Firing Data Manually (60mm Mortar)	G-0341-19.17
Compute Firing Data Electronically (60mm Mortar)	G-0341-19.18
Maintain 81mm Mortar	G-0341-20.2
Store 81mm Mortar Ammo in Field	G-0341-20.3
Boresight 81mm Mortar	G-0341-20.7
Record Target Data	G-0341-20.14
Select 81mm Mortar Position	G-0369-26.1
Lay 81mm Mortar Section Parallel	G-0369-26.2
Issue 81mm Mortar Fire Commands	G-0369-26.3
Maintain TOW Launcher	G-0352-23.2
Select TOW Fighting Positions	G-0352-23.3
Mount TOW (Ground)	G-0352-23.4
Mount TOW (Vehicle)	G-0352-23.5
Prepare Situation Report	G-0369-25.1
Prepare Operation Overlay	G-0369-25.2
Prepare/Update Situation Map	G-0369-25.3
Prepare Joint Message Form	G-0369-25.4
Maintain S-3 Journal	G-0369-25.5
Maintain Service Pistol	G-03xx-29.2

ACTIONS:

1. Platoon halts in covered and concealed position to rear of defensive position. The platoon sergeant checks on and establishes security.

*2. The platoon commander, RO, squad leaders, and security element approach the position from the rear and conduct reconnaissance of the position.

*3. Platoon commander assigns squad sectors, key weapon positions, observation/listening post locations, and designates platoon command post (CP) location. (See Drill 27, *Consolidate and Reorganize*.)

4. Security elements establish security during reconnaissance and defensive position occupation.

5. Squads occupy and prepare their positions in accordance with unit SOP for priority of work.

*6. The squad leaders/platoon commander select M60/SAW positions based on the factors of METT-T to ensure that they have interlocking fires across the platoon front, tie in with adjacent platoons, and cover manmade and natural obstacles.

*7. The squad leaders/platoon commander position *Dragons* to cover likely mounted enemy avenues of approach and to maximize flank shots.

*8. Leader returns to assembly area and controls movement of unit to battle position, on separate routes if possible.

9. Squads occupy designated sectors simultaneously, if possible.

NOTE: It is important to reconnoiter the position from the enemy perspective in order to properly appreciate how the position should be defended.

*10. Squad leaders adjust initial positions and designate exact locations for each individual and crew-served weapons.

11. Platoon members begin preparation of fighting positions as follows:

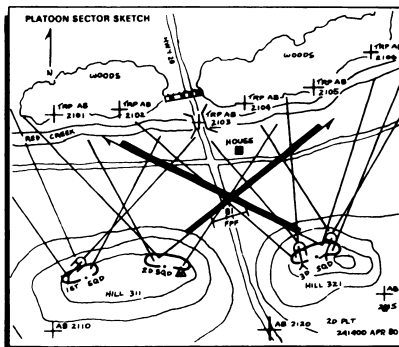
- a. Clear fields of fire.
- b. Dig fighting position.
- c. Physically reconnoiter in front of position to become familiar with terrain and to locate dead space.
- d. Make physical contact with adjacent positions, and select covered/concealed route to those positions.
- e. Emplace Claymore mines.
- f. Prepare range cards and aiming stakes.
- g. Prepare overhead cover for fighting positions.
- h. Camouflage positions.

*12. Squad leaders/platoon commanders ensure that M60/SAW positions have interlocking fires across the platoon front, tie in with adjacent platoons, and cover manmade and natural obstacles. They also coordinate for indirect fire.

*Leader tasks

13. The RO lays wire (*hot-loop*) to each squad and conducts a communications check to ensure that land mine is operational.
- *14. The platoon commander designates a squad(s) to emplace obstacles in accordance with company obstacle plan.
- *15. The squad leader/platoon commander identifies alternate and supplementary positions to be prepared and approved as time permits.
- *16. The platoon commander (with forward observer) updates the fire plan. The plan covers enemy avenues of approach, known or likely enemy positions, and final protective fires (FPF).
- *17. The platoon commander prepares a platoon sector sketch that includes:
 - a. The platoon sector or engagement area
 - b. Squad positions (*primary, alternate, and supplementary*)
 - c. Dragon positions with M60/SAW and primary sectors of fire
 - d. Final protective line (FPL) or principal direction of fire (PDF) for M60s/SAWs
 - e. OPs/LPs
 - f. Target reference points
 - g. Maximum engagement lines for mounted Dragons and M60s/SAWs
 - h. OPs and TRPs
 - i. Mines and obstacles
 - j. Indirect fire targets
 - k. FPF
 - l. Direction of north
 - m. Unit designation
 - n. Date-time group

*Leader tasks



*18. The platoon commander forwards a copy of the platoon sector sketch to the company command.

19. When moving to alternate and supplementary positions, covered and concealed routes will be used.

20. Conduct of the defense

a. OPs detect and report enemy elements.

b. Call for and engage the attacking enemy elements with supporting fires according to the company operation order OPORD/FRAGO.

c. Initiate direct fire engagement of attacking OPFOR elements according to the company ORORD/FRAGO and fire command. Antiarmor weapons conduct the initial engagement simultaneously, if possible. (See Drill 16, *Acquire Targets and Distribute Fire*.)

d. Increase the intensity of platoon defensive fires as enemy elements close to within range of additional weapons.

e. As fighting positions receive effective return fire, members move behind frontal parapets and deliver flanking fires according to platoon fire plan.

f. Platoon commander requests final protective fires from supporting indirect fires units as enemy nears final protective line.

g. Exposed OPFOR armored vehicle crewman and vehicle optics are engaged with rifle and M60/SAW fire.

h. Assaulting vehicles are engaged with Dragon, LAW, and M203 grenade launchers from behind frontal cover. Fires are directed at the flanks of the vehicles.

i. If the enemy conducts a dismounted assault, the following actions occur:

- (1) Initiate direct and supporting FPF. M60s/SAWs fire on interlocking grazing FPLs at cyclic or rapid rate on designated FPL.
- (2) Other weapons fire at rapid rate on designated PDF.
- (3) Assaulting troops are engaged with Claymore mines and handgrenades as the assault continues.

*Leader tasks

j. If enemy vehicles penetrate platoon fighting positions, take the following actions:

- (1) Engage the rear of assaulting vehicles from behind frontal cover.
- (2) The platoon continues to engage following vehicles to protect personnel who are engaging the initial assaulting vehicles.
- (3) Grenades are thrown or fired into vehicles from which infantry is dismounting.
- (4) Dismounting infantry is engaged with M60s/SAWs as soon as rear doors/ramps open.

***Leader tasks**

DRILL 29: ESTABLISH A PATROL BASE
UNIT: PLATOON/SQUAD

INDIVIDUAL TRAINING STANDARDS:

(No standards identified for this drill.)

ACTIONS:

- *1. Patrol leader chooses tentative patrol base location by map reconnaissance during the planning phase.
- *2. Patrol leader halts patrol 200-400 meters from tentative patrol base site and establishes local security.
- *3. Patrol leader issues contingency plan and recons (with recon team) the tentative patrol base site. See Drill 10, *Establish An Objective Rally Point*.
- *4. At a minimum, the location chosen by the patrol leader must have dense vegetation providing good concealment; be remote from human habitation; be close to a water source; avoid known or suspected enemy locations, built-up areas, and natural lines of drift; and have multiple withdrawal routes (METT-T evaluation).
5. Once leader's recon is completed, patrol moves to patrol's base.
6. Rear security camouflages the trail from the point where the halt was conducted to the site itself.
7. Patrol occupies the patrol base by deploying into it in a controlled manner and establishing a perimeter defense.
8. Only one point of entry/exit is used.
9. Patrol leader places temporary OP positions.
10. Recon and Security (R&S) teams are dispatched to reconnoiter and report signs of enemy activity, suitable OP locations, possible rally points, withdrawal routes and dead space.
11. After R&S teams return, R&S team leader gathers all information, moves to the center of the patrol base and disseminates information.
- *12. After patrol leader receives input from R&S teams, he designates withdrawal routes, rally points, alternate patrol base, and OP positions (METT-T evaluation).
13. OPs move to designated positions and establish communications with Patrol CP.
- *14. Patrol leader makes final perimeter adjustment and develops a fire plan (METT-T evaluation).
15. All patrol members are made aware of priorities of work, rally point/alternate patrol base, alert plan, security plan, evacuation plan, and locations of OPs. (OPs must also be given this information).
16. Only necessary movement is permitted within patrol base.
17. At a minimum, 50 percent of personnel must be awake and on security unless ordered otherwise (*METT-T evaluation*).
18. Noise, light, and camouflage discipline are continuously enforced.
19. In daylight, 2-man catholes are used outside the perimeter; at night, catholes within the perimeter are used.

20. Early warning devices are put on avenues of approach.
21. All weapons and equipment are maintained on a staggered basis.
22. Patrol members eat, wash, shave, etc., on a staggered basis.
23. All trash is either buried or carried with the patrol.
24. Rest and sleep are permitted on a staggered basis only after all work is done.
25. Water parties are dispatched as necessary (don't give your location away).
- *26. Leaders use the time spent in the patrol base to continue to plan and prepare for the mission.
- *27. Leaders enforce a one-hour stand-to in the morning and in the evening.
28. After departure, all signs of the patrol's presence are removed or concealed.
- *29. If patrol leader chooses to move to a hide position, it is occupied in the same manner.
30. Other than camouflage, absolutely no activities take place in the hide position.
31. Patrol members maintain security and rest until receiving orders from the patrol leader to depart and continue the mission.

* Leader tasks

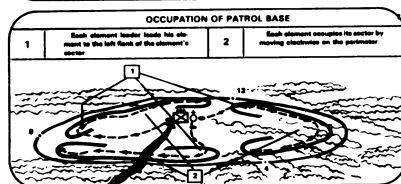
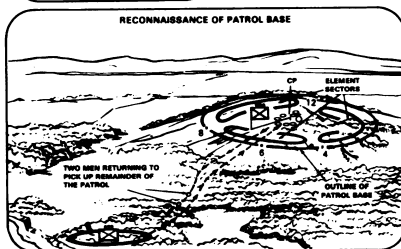
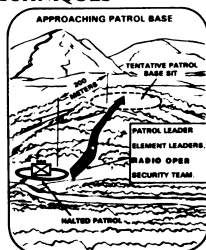
OPERATIONAL TECHNIQUES

1. The patrol leader may choose one of these three ways to deploy the patrol into the site:

a. The patrol leader moves to the center of the site and designates 12 o'clock. Patrol members move in single file in a circle until the first man meets the last man. All members take prone positions and face outward.

b. The patrol leader moves to the center of the site followed by the patrol and element leaders. Patrol leader assigns sectors using the clock system. Elements file out to the perimeter along the left flank of their sectors and occupy the perimeter moving clockwise. Once in their positions, they take prone positions and face outward.

c. The patrol leader moves into the site and designates where each individual goes as they file past him using terrain features.



DRILL 30: OCCUPY/PREPARE DEFENSIVE POSITION (MOUT)
UNIT: PLATOON

INDIVIDUAL TRAINING STANDARDS:

(No standard identified for this drill.)

ACTIONS:

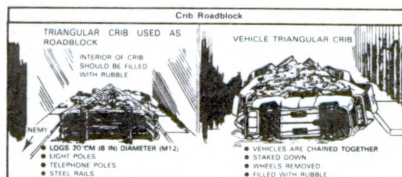
- *1. Platoon commander establishes observation post and conducts reconnaissance.
- *2. Platoon commander selects buildings for defensive positions and assigns squad sectors.
- *3. Squad leaders position teams to provide mutually supporting and interlocking fires.
- *4. M60s/SAWs are positioned near ground level to maximize grazing fire.
- *5. Dragons and LAWs are positioned in upper stories to afford long-range shots at the tops of tanks.
- 6. Wire communications are established between squad positions.
- 7. Obstacles are emplaced to deny enemy access to streets or buildings, or to slow his movement (include rooftops and inside of buildings).
- 8. Squad establishes and marks routes for movement between positions, both within and between buildings.
- *9. Platoon commander/squad leaders inspect firing positions for proper weapons siting, camouflage, and fortifications.
- *10. Platoon commander develops a fire support plan.
- *11. Platoon commander/squad leaders conduct rehearsals.
- * Leader tasks

OPERATIONAL TECHNIQUES

The following techniques can be used to employ military operations on urbanized terrain obstacles.

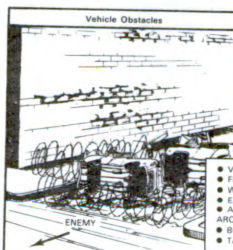
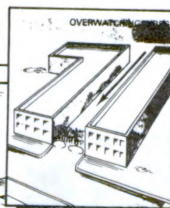
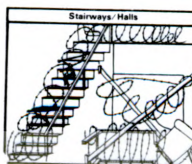
a. *Street obstacles.*

Overturn cars and trucks to create obstacles for armor or vehicular passage. Construct armored obstacles with local materials when possible (for example, in a railyard, railroad cars can be pushed together and overturned). Crater roads, as needed.



b. *Building obstacles.*

Stack furniture and appliances to obstruct enemy movement in buildings. Deploy barbed wire and mines within buildings to channel enemy movement.

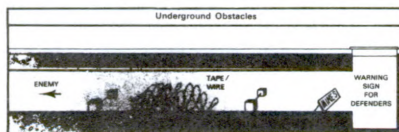
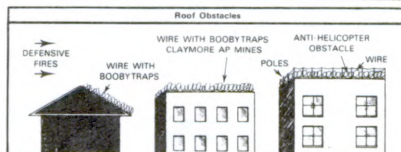


- VEHICLES ARE TURNED ON SIDES
- FILLED WITH RUBBLE/DIRT
- WHEELS ARE REMOVED
- EACH VEHICLE ANCHORED DOWN
- AT/AP MINES ARE CONCEALED AROUND OBSTACLE
- BOOBYTRAPS ARE EMPLOYED
- TAPE / WIRE ENTANGLES VEHICLE

c. *Open-space obstacles.*

Close gaps between houses with overturned vehicles, wire, mines, cartering charges, or fallen trees.

d. *Underground and roof obstacles.* Construct anti-personnel obstacles to block infantry approaches through or over underground systems and rooftops.



PART III

JOBS AIDS

for

INFANTRY OCCUPATIONAL FIELD (03)

INDIVIDUAL TRAINING STANDARDS (ITS)

PART III - JOB AIDS

GENERAL

Part III of the Battle Drill Guide provides job aids to assist Marines in acquiring individual skills and knowledge required to perform Infantry tasks to standard according to The Individual Training Standards for Occupational Field 03 (MCO 1510.35A) which support collective training standards (Mission Performance Standards).

SCOPE

Each task in this manual includes specific conditions, standards, and performance steps that are to be emphasized during training in order to prepare Marines and units for formal evaluations using the Marine Corps Combat Readiness Evaluation System (MCCRES).

HOW TO USE THE JOB AIDS

The job aids have been compiled so that they can be selectively and easily removed by the individual Marine to practice specific job skills to standard. Procedures for using the aids are as follows:

1. Review the Battle Drill Guide to determine individual tasks necessary to support the mission.
2. Select tasks that Marines are deficient in and need to practice prior to Battle Drill training (review Individual Training Proficiency Chart).
3. Assign tasks to individual Marines for practice, directing attention to appropriate job aid(s).

INDEX: JOB AIDS FOR INDIVIDUAL TRAINING STANDARDS (TASKS)

Section 1. TACTICAL MEASURES	Page
(G-0300-1.4) Estimate Range	112
(G-0300-1.5) Emplace/Fire/Recover Tripflare	114
(G-0300-1.7) Establish Landing Zone	116
(G-0300-1.8) Direct Helicopter Landing/Takeoff	119
(G-0300-1.9) Control Unit Movement When Not In Contact	123
(G-0300-1.10) Call For/Adjust Indirect Fire	131
(G-0300-1.11) Prepare Terrain Sketches/Models	140
 Section 2. SECURITY AND INTELLIGENCE	
(G-0300-2.3) Process Known or Suspected Enemy Personnel	143
 Section 3. M16A2 SERVICE RIFLE	
(G-0300-4.2) Engage Target with Service Rifle Using	145
Field Firing Techniques	
 Section 4. M203 GRENADE LAUNCHER	
(G-0300-5.5) Engage Target with Grenade Launcher Using	150
Limited Visibility Techniques	
 Section 5. HANDGRENADES	
(G-0300-8.1) Inspect Handgrenade	152
(G-0300-8.2) Maintain Handgrenade	152
(G-0300-8.3) Engage Target with Handgrenade	153
 Section 6. MINES	
(G-0300-9.1) Install and Fire/Recover M18A1 Claymore	156
Mine	
(G-0300-9.2) Install/Recover M18A1 Claymore with	159
Tripwire(s)	
(G-0300-9.3) Install/Fire Recover M16A1 Anti-	162
personnel Mine (W/WO Tripwires)	
(G-0300-9.4) Install/Recover M21 Antitank Mine	165
 Section 7. COMMUNICATION	
(G-0300-10.3) Repair Field Wire	169
(G-0300-10.6) Operate Radio Set in Secure Voice Mode	172
(G-0300-10.7) Send Radio Message	176
(G-0300-10.8) Authenticate/Encode/Decode Transmissions	181
(G-0300-10.9) Construct Field Expedient Antenna	184

Section 8. LAND NAVIGATION**Page**

(G-0300-11.1)	Navigate Using Compass	187
(G-0300-11.2)	Navigate Using Map	191
(G-0300-11.3)	Navigate Using Map & Compass	193

Section 9. FIRST AID

(G-0300-12.1)	Apply First Aid for Traumatic Amputation	202
(G-0300-12.2)	Apply First Aid for White Phosphorus Burns	206

Section 10. NUCLEAR, BIOLOGICAL, AND CHEMICAL

(G-0300-13.2)	Detect Chemical Agent with M256 Chemical Agent	207
(G-0300-13.3)	Prepare & Submit NBC-1 Reports	211
(G-0300-13.4)	Initiate Unmasking Procedures	214
(G-0300-13.5)	Cross Contaminated Area	216

Section 11. TACTICAL MEASURES

(G-0311-14.1)	Estimate Situation	224
(G-0311-14.2)	Prepare & Issue Oral OP Order	226
(G-0311-14.3)	Plan Patrols	231
(G-0311-14.4)	Establish Security Post	237
(G-0311-14.5)	Control Unit Fires	240

Section 12. MACHINEGUN

(G-0331-16.7)	Prepare Range Card (M60 Machinegun)	244
(G-0332-17.9)	Prepare Range Card (M2 Machinegun)	244
(G-0332-18.8)	Prepare Range Card (MK19 Machinegun)	244
(G-0332-18.9)	Engage Target with MK19 Machinegun	249
(G-0332-17.10)	Engage Target with M2 Machinegun	253
(G-0332-17.13)	Maintain Night Vision Sight	258
(G-0332-18.12)	Maintain Night Vision Sight	258
(G-0332-18.11)	Take Immediate Action (MK19)	263

Section 13. 60mm MORTAR

(G-0341-19.6)	Select 60mm Mortar Position	267
(G-0341-19.7)	Issue 60mm Mortar Fire Commands	269
(G-0341-19.11)	Lay 60mm Mortar Section Parallel	272
(G-0341-19.17)	Compute Firing Data Manually (60mm Mortar)	274
(G-0341-20.12)	Compute Firing Data Manually (81mm Mortar)	274

Section 14. 81mm MORTAR

(G-0341-20.7)	Boresight 81mm Mortar	287
(G-0341-20.14)	Record Target Data (81mm Mortar)	291

Section 15. DRAGON

(G-0351-21.2)	Construct Fighting Position for Dragon	308
(G-0351-21.3)	Engage Target with Dragon	311
(G-0351-21.4)	Take Immediate Action (Dragon)	325

Section 16. SMAW	Page
(G-0351-22.3) Engage Target with SMAW	327
(G-0351-22.5) Engage Target w/SMAW using Night Vision Sight	334
Section 17. TOW	
(G-0352-23.3) Select TOW Fighting Positions	337
(G-0352-23.6) Engage Target with TOW	339
(G-0352-23.7) Take Immediate Action (TOW)	358
Section 18. TACTICAL MEASURES	
(G-0369-24.1) Direct Airstrike	360
(G-0369-24.2) Recommend Locations for Fighting Positions for Crew-Served Weapons	363
(G-0369-24.3) Prepare Platoon Defensive Fire Plan	366
Section 19. OPERATIONS	
(G-0369-25.1) Prepare Situation Report	368
(G-0369-25.2) Prepare Operation Overlay	372
(G-0369-25.3) Prepare/Update Situation Map	374
(G-0369-25.4) Prepare Joint Message Form	387
(G-0369-25.5) Maintain S-3 Journal	389
Section 20. 81mm MORTAR	
(G-0369-26.1) Select 81mm Mortar Position	392
(G-0369-26.2) Lay 81mm Mortar Section Parallel	394
(G-0369-26.3) Issue 81mm Mortar Fire Commands	401
Section 21. MINES	
(G-0369-27.1) Install/Recover Hasty Protective Minefield	405
Section 22. DEMOLITIONS	
(G-03XX-28.1) Detonate Explosives using Detonating Cord	410
(G-03XX-28.2) Detonate Explosives Non-Electrically	413
(G-03XX-28.3) Detonate Explosives Electrically	418
(G-03XX-28.4) Clear Demolition Misfire	424
Section 23. 9mm SERVICE PISTOL	
(G-03XX-29.1) Inspect Service Pistol	427
(G-03XX-29.2) Maintain Service Pistol	432
(G-03XX-29.3) Engage Target with Service Pistol	438
(G-03XX-29.4) Take Immediate Action (Service Pistol)	441

TASK: ESTIMATE RANGE (G-0300-1.4/LCPL)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: binoculars.

STANDARD: Ranges will be estimated within 20 percent of the actual distance.

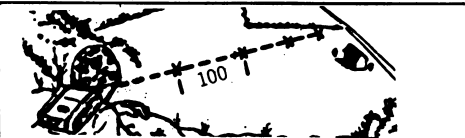
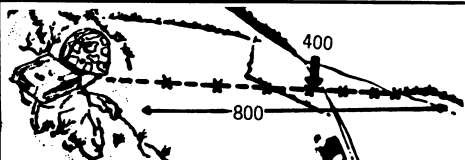
BATTLE DRILL(S): 16

PERFORMANCE STEPS:**A. Estimate range by sight.**

Determine estimated range using one of the following methods:

100-Meter Unit-of-Measure Method (Daytime)

1. Picture a distance of 100 meters on the ground (a football field or about 130 paces).
2. Estimate the number of 100-meter lengths between you and the target:

Ranges up to 500 Meters - Count number of 100-meter lengths to determine range.	
Ranges over 500 Meters - Select halfway point. - Estimate range to that point. - Multiply this estimate by two to determine range.	

Appearance of Objects Method (Daytime)

1. Determine range with naked eye.
 - a. Study appearance of men and objects at various distances until you know how far away they are by how clear they seem to be.

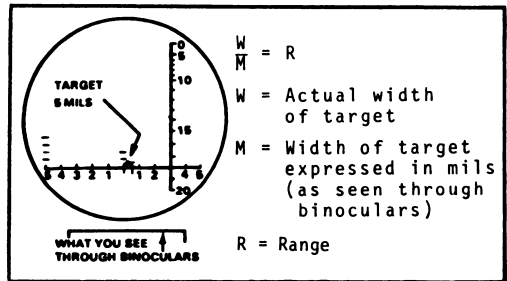
TARGET APPEARANCE	
SEEMS CLOSER	SEEMS FARTHER
• BRIGHT CLEAR DAY • SUN IN FRONT OF TARGET • HIGHER ELEVATIONS • LARGE TARGETS • BRIGHT COLORS (WHITE, RED, YELLOW) • CONTRAST • LOOKING ACROSS RAVINES, HOLLOW, RIVERS DEPRESSION • AT SEA	• FOG, RAIN, HAZY TWILIGHT • SUN BEHIND TARGET • LOWER ELEVATIONS • SMALL TARGETS • DARK COLORS • CAMOUFLAGED TARGETS

- b. Use this chart as a guide in determining distance of objects.

RANGE DETERMINATION RECOGNITION METHOD	
TARGET	NAKED EYE (Meters)
TANK CREW MEMBERS, TROOPS MACHINE GUN, MORTAR, ANTITANK GUN, ANTITANK MISSILE LAUNCHERS	500
TANK, ARMORED PERSONNEL CARRIER (APC), TRUCK, BY MODEL	1,000
TANK, HOWITZER, APC, TRUCK	1,500
ARMORED VEHICLE, WHEELED VEHICLE	2,000

2. Determine range using binoculars.

- Read the binocular reticule scale to obtain the mil value for the target.
- Divide the *known* width, length, or height of the object by the mil value to obtain the range.



ALTERNATIVE METHOD:

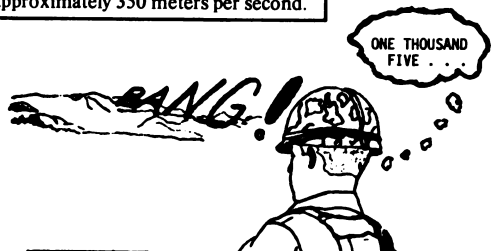
Use the chart below to determine or verify the range for *Threat Medium Tanks* or *Threat Heavy Tanks*:

MIL ANGLE MEASURE- MENT		1	2	3	4	5	6	7	8	9	10
THREAT MEDIUM TANK	LENGTH: 6.5 METERS	6,500	3,300	2,200	1,600	1,300	1,100	900	800	700	700
	WIDTH: 3.5	3,500	1,800	1,200	900	700	600	500	400	400	400
THREAT HEAVY TANK	LENGTH: 7.5 METERS	7,500	3,800	2,500	1,900	1,500	1,300	1,100	900	800	800
	WIDTH: 3.5	3,500	1,800	1,200	900	700	600	500	400	400	400

B. Estimate range by flash and sound.

NOTE: Sound travels through air at approximately 350 meters per second.

- Count the number of seconds between the flash and sound of firing guns: "One thousand one, one thousand two," etc.
- If you must count higher than nine seconds, start over at one.
- Multiply the number of seconds by 350 to determine distance to the weapon in hundreds of meters.



**ELAPSED TIME BETWEEN IMPACT
AND SOUND x 350 = DISTANCE.**

RESOURCES:

MCI Course 03.31h, 81-mm Mortar NCO
Soldier's Manual of Common Tasks, Skill Level 1.

TASK: EMPLACE AND FIRE OR RECOVER TRIPFLARES (G-0300-1.5/LCPL)

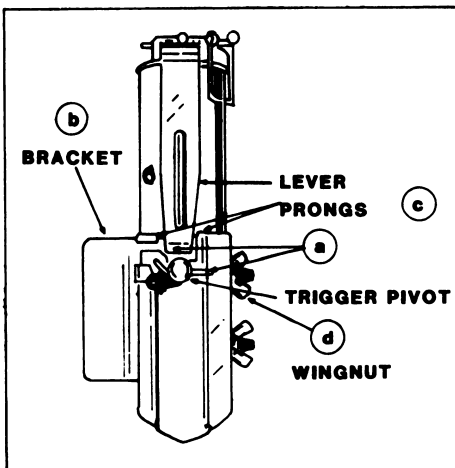
CONDITIONS: Conditions are determined by mission requirements. You will be provided: an M49A1 tripflare, field wire or string, and engineer tape.

STANDARD: Tripflares will be installed and armed so that anyone pulling the tripwire/string will cause it to go off; or, tripflare will be disarmed and recovered, if required.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:**A. Emplace the M49A1 (Pull-Pin Method).**

1. Position the flare to illuminate the field toward the enemy.
2. Hold the mounting bracket in a vertical position 15 to 18 inches above the ground.
3. Nail the bracket to a tree or post *or* anchor it with rocks.
4. Mount the flare into the bracket:
 - a. Align lever with trigger pivot.
 - b. Slide flare downward into the bracket until bottom edge of the lever is within 1/16 inch above the bracket.
 - c. Center lever between bracket prongs.
 - d. Tighten upper wingnut to clamp flare in its bracket.

**B. Arm the M49A1 tripflare (Pull-Pin Method).**

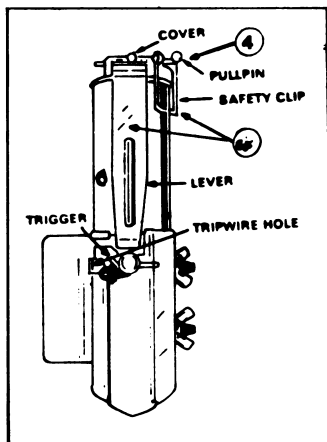
1. Fasten one end of tripwire to a post or stake about 40 feet from flare.
2. Position tripwire to the right or left of the flare when facing the flare trigger.

WARNING: Do not release lever when pressing it down in step 3. Release of lever will cause flare to function.

3. Insert pull pin into cover loading assembly:
 - a. Press and HOLD lever down with one hand while removing safety clip assembly with the other hand.

REMEMBER: Release of lever at this will cause the flare to activate.

- b. While still holding lever, insert the pull pin through two safety holes of the cover loading assembly.
 - c. Slip holes on the cover loading assembly.



CAUTION: Before releasing lever (next step), check to ensure that the pull pin will hold in safety clip holes.

4. Carefully release hold on lever.
5. Make certain pull pin is retained in safety clip holes by lever.
6. Pull loose ends of tripwire taut and fasten to loop in pull pin.
7. Check to ensure that tripwire is taut and tightened at both ends.

THE TRIPFLARE IS NOW READY TO BE FIRED!

C. Recover tripflares.

IF:	THEN:
FLARE MISFIRES	a. DO NOT approach flare for 5 minutes. b. After waiting period, remove flare carefully. c. Forward flare to authorized personnel for disposal.
FLARE IS PREPARED BUT NOT USED WARNING: Use only the safety clip holes in cover loading assembly when reassembling the flare.	a. Disarm flare: - Carefully depress lever against flare body. - Remove pull pin. - Secure lever by inserting one end of safety clip through one of the safety clip holes in the cover loading assembly. - Snap other end of safety clip into other safety clip hole. - Detach wire from pull pin. - Return flare to its original packing. b. Inspect flare before returning it to storage.

RESOURCES:

TASK: ESTABLISH LANDING ZONE (G-0300-1.7/SGT)

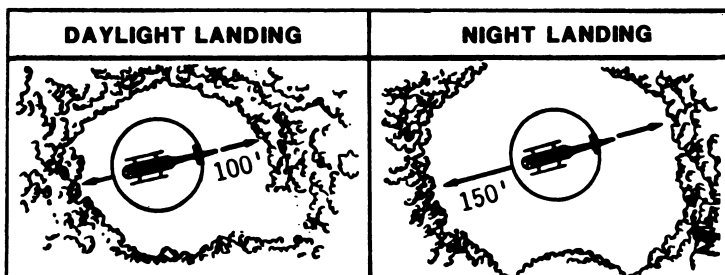
CONDITIONS: Conditions are determined by mission requirements. You will be provided: equipment and munitions to clear landing zone, smoke grenades, and colored panels.

STANDARD: After selecting a site which meets the listed criteria, the landing zone will be cleared of obstacles that could damage the helicopter or injure Marines on the ground, and Marines will be positioned so as to prevent enemy penetration of the landing zone.

BATTLE DRILL(S): 1, 28

PERFORMANCE STEPS:**A. Select site for landing zone.**

1. Locate ground area to set up appropriate size landing point for each helicopter.
 - a. **DAYLIGHT LANDING** -Select level area approximately 100 feet larger than diameter of aircraft rotor blades.
 - b. **NIGHT LANDING** -Select level area approximately 150 feet larger than diameter of aircraft rotor blades.



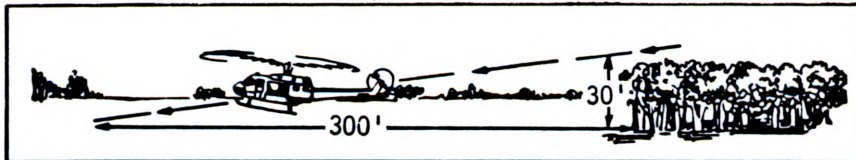
Use the following chart as a guide in selecting the appropriate size landing point:

TYPE AIRCRAFT	ROTOR BLADE LENGTH FEET	LANDING ZONE DIAMETER	
		DAYLIGHT (+ 100)	NIGHT (+ 150)
UH-1E/N	60	160	210
CH-46	85	185	235
CH-53	100	200	250

2. Ensure that site is free of major obstacles that might obstruct landings or takeoffs (tall trees, telephone or power lines).

RULE: Position landing point 10 times as far from an obstacle as the obstacle is high (10:1 ratio).

EXAMPLE: A helicopter landing or taking off near a 30-foot tree needs at least 300 feet of horizontal clearance.



3. Check site for adequate approach and departure directions. Site should meet the following conditions:

- Takeoffs/landings can take place over the lowest obstacles.
- Direction is into the wind with maximum crosswinds of 10 knots and trailwinds of no more than 5 knots.

4. Select ground surface with these conditions:

- Firm enough to prevent bogging down
- Free of heavy dust, loose snow, logs, rocks, or dry grass

5. Ensure that ground slopes do not exceed 14 percent or 8 degrees.

6. Choose site that can be identified from the air.

7. Check enemy position/situation to ensure that site can be secured.

8. Ensure that landing site is defensible.

B. Secure landing zone.

Establish a 360° perimeter around landing zone.

C. Improve landing zone, if required.

1. Expend munitions to burn dry grasses, explode mines, trip boobytraps, and destroy landing obstacles.
2. Lower wires to the ground and clear area of rocks, stumps, etc., over one-foot high.
3. Remove loose debris that may damage rotor blades or engine.

D. Mark landing zone.

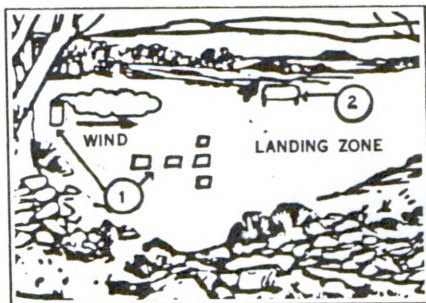
1. Mark landing zone for daylight landing.

- a. Set off smoke grenade or use colored panels to mark landing site and to show wind direction.

CAUTION: Use smoke only as needed so as not to attract the enemy.

- b. Mark immovable obstacles with colored panels or other markers.

CAUTION: Stake panel to ensure that it is not uprooted by rotor wash.



2. Mark landing zone for night landing.

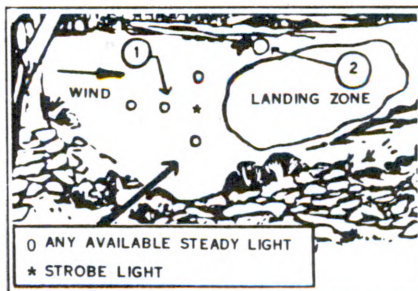
- a. Position expedient lights (lanterns, flashlights, strobe lights) as follows:

NOTE: Lights at head of T must be at least 5 paces apart. Lights in the stem, at least 8 paces apart.

- Point beam in direction from which helicopter should approach.

- Position lights to show wind direction:

- Place blinking light farthest upwind.
- Place the steady lights downwind.



- b. Mark immovable obstacles with colored lights.

CAUTION: All lights should be hooded or turned upside down until aircraft are known to be inbound.

RESOURCES:

FMFM 5-3, Assault Support
Ranger Airborne Handbook

TASK: DIRECT HELICOPTER LANDING/TAKEOFF (G-0300-1.8/CPL)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a radio with appropriate call signs and frequency, two flashlights, and smoke grenades.

STANDARD: You will provide instructions that will enable the pilot to locate the landing zone, land where directed, and takeoff when directed.

BATTLE DRILL(S): 1, 28

PERFORMANCE STEPS:**A. Establish/maintain radio communication with helicopter.**

1. Make initial radio contact with pilot giving the correct unit identification (call sign):

EXAMPLE: ALPHA 4 WHISKEY THIS IS FOXTROT 2 NOVEMBER

2. Give zone brief to pilot. Provide the following information:

- | | |
|------------------------------|---|
| 1. Mission No. | 9. Friendly positions: Direction/Distance |
| 2. Location: COOR/RAD/DME | 10. Enemy positions: Direction/Distance |
| 3. Unit call sign | 11. Last fire received: Time/Type |
| 4. Frequency | 12. Direction of fire/distance |
| 5. LZ marking | 13. Clearance to fire: Direction/Distance |
| * 6. Wind direction/Velocity | 14. Approach/Retirement (recommended) |
| 7. Elevation/Size | 15. Personnel/Equipment |
| 8. Obstacles | 16. Other |

*Use the following method to determine/report *wind condition* and *direction*:

Angle of smoke method. Observe smoke blowing. The wind is blowing accordingly:

SMOKE STRAIGHT UPNO WIND
 SMOKE 30°WIND 3-5 KNOTS
 SMOKE 60°WIND 5-7 KNOTS
 SMOKE ALONG GROUNDWIND IN EXCESS OF 8 KNOTS

SAMPLE LANDING ZONE BRIEF

TRANSMISSION ITEM	YOU SAY:
1. MISSION NO.	1. (Data will be provided by higher authority)
2. LOCATION: COOR/RAD/DME	2. GRID 456129
3. UNIT CALL SIGN	3. A 4 F
4. FREQUENCY	4. PRIMARY FM 30.50, SECONDARY FM 45.10
** 5. LZ MARKING	5. SIGNAL MIRROR, AIR PANELS
6. WIND DIRECTION/VELOCITY	6. WIND FROM EAST AT FIFTEEN KNOTS
7. ELEVATION/SIZE	7. ELEVATION 2500 FEET SIZE 180 FEET IN DIAMETER
8. OBSTACLES	8. FORTY FOOT TREE NINETY METERS SOUTH OF LZ
9. FRIENDLY POSITIONS: DIRECTION/DISTANCE	9. FRIENDLIES SOUTH EAST 100 METERS
10. ENEMY POSITIONS: DIRECTION/DISTANCE	10. ENEMY SOUTH EAST 500 METERS
11. LAST FIRE RECEIVED	11. 1800, SMALL ARMS
12. DIRECTION OF FIRE/DISTANCE	12. ENEMY FIRE FROM SOUTHEAST 500 METERS
13. CLEARANCE TO FIRE: DIRECTION/DISTANCE	13. SOUTH AND SOUTHEAST 150 METERS FROM LZ
14. APPROACH/RETIREMENT (RECOMMENDED)	14. APPROACH HEADING 90° RETURN HEADING 350°
15. PERSONNEL/EQUIPMENT	15. SIX PERSONNEL WITH ALICE PACKS & RIFLES
16. OTHER	16. 5 DEGREE SLOPE

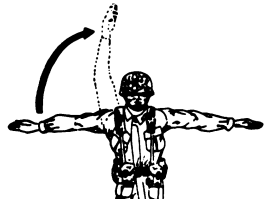
**** SECURITY CAUTION:** If smoke is used to mark landing zone, DO NOT tell pilot what color smoke will be used. Ask pilot to acknowledge color after grenade is set off.

B. Use hand and arm signals to direct landing/takeoff.

NOTE: Use flashlights to provide signals at night.

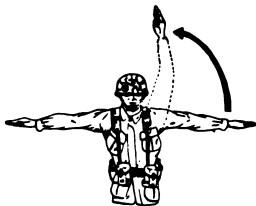
NOTE: When helo to Marine contact is made, NEVER take eyes off the helo until it has landed safely.

NOTE: If possible, always direct helo landing INTO the wind.

PREPARE FOR GUIDANCE	FORWARD
Extend arms above the head, palms facing inboard. 	Raise hands to shoulder level in front of the body, palms facing away from the helicopter. Move the hands in such a motion as to simulate a pulling motion. 
BACKWARD	MOVE RIGHT
Extend arms downward beside the body with palms facing the helicopter. Move hands backward and forward to simulate a pushing motion. 	Extend arms horizontally sideways in direction of movement. Swing other arm over the head in the same direction. 

MOVE LEFT

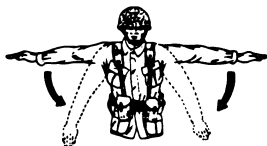
Extend arm horizontally sideways in direction of movement. Swing other arm over the head in the same direction.

**UPWARD**

Arms extended horizontally sideways beckoning upward with palms turned up.

**DOWNWARD**

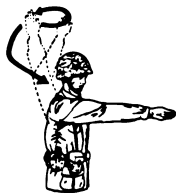
Arms extended horizontally sideways beckoning downward with palms turned down.

**LAND**

Cross and extend arms downward in front of the body.

**TAKE OFF**

Circular motion of right hand overhead, ending in a throwing motion into the wind.

**WAVE OFF**

Cross arms overhead and wave rapidly.



HOVER

Extend arms horizontally sideways,
palms down.

NOTE: Do not give this signal
until the helicopter is
approximately 5 feet off the
ground and just short of the
desired landing point
depending on its forward speed.

**RESOURCES:**

MCI Course 03.32f, Reconnaissance Marine
FMFM 1-2, Marine Troop Leader's Guide
NWP 55-9-ASH, Vol. 1 (Rev. B)

TASK: CONTROL UNIT MOVEMENT WHEN NOT IN CONTACT (G-0300-1.9/CPL)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a mission, the likelihood of enemy contact, and two or more points to travel between.

STANDARD: You must organize your unit for movement depending on the mission, likelihood, of enemy contact and the terrain.

BATTLE DRILL(S): 2

PERFORMANCE STEPS:**A. Organize the unit for movement.**

1. Ensure that you understand your mission:

- Where team/squad is to move
- What to do when you reach the objective
- Route of movement
- Location of friendly squads/teams

NOTE: If you do not understand the mission, ask questions.

2. Select/Set-up **FORMATION(S)** for movement based on terrain, visibility, mission, and enemy situation:

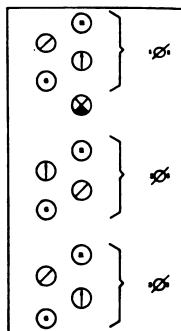
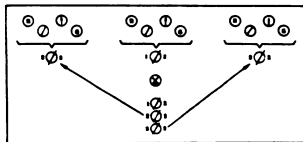
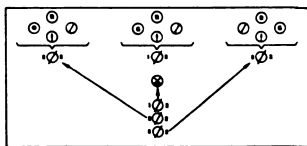
SQUAD COMBAT FORMATIONS**USE SQUAD LINE:**

- To maximize firepower to front and rear
- When advancing against known enemy position
- When advancing rapidly across a danger area

USE SQUAD COLUMN:

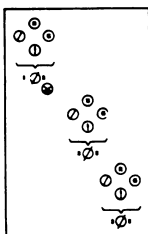
- To maximize fire to the flanks
- Use during these conditions:
 - Night
 - Passage of minefields
 - Poor visibility (fog)
 - Jungle and dense terrain
 - Narrow passages and cuts

(Provides little security to flanks)



USE SQUAD ECHELON RIGHT:

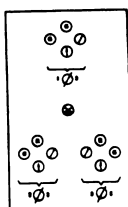
- To protect an exposed flank
- When enemy contact is expected from the flank
- To permit maximum firepower to the flank



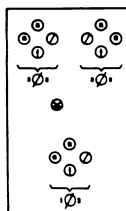
USE SQUAD WEDGE or VEE:

- When terrain is fairly open
- When visibility is good
- When possible danger of receiving enemy fire from the front and flanks

(Provides all-around security)



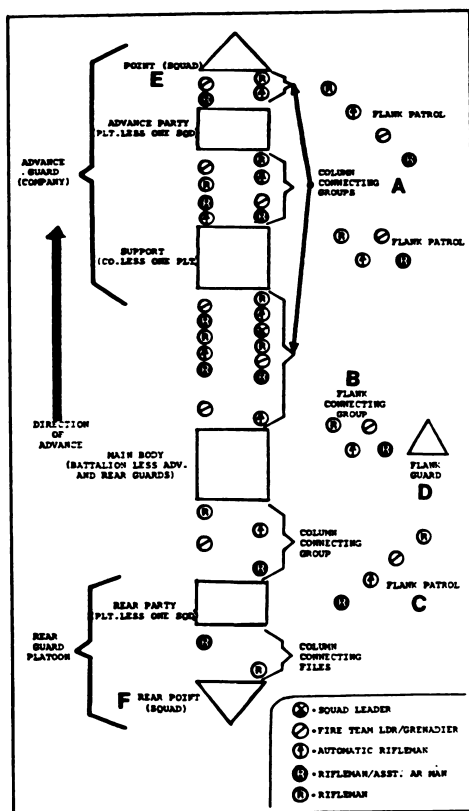
WEDGE



VEE

TACTICAL COLUMN FORMATION

- Column connecting files or groups
- Flank connecting files or groups
- Flank patrol
- Point of flank guard
- Point of advance guard
- Rear point



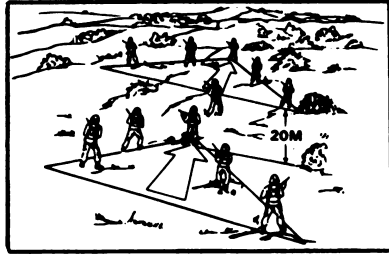
3. Select MOVEMENT TECHNIQUE based on likelihood of enemy contact:

a. TACTICAL: Enemy Contact Not Likely

- ONE FIRE TEAM FOLLOWS THE OTHER.
- Position teams 20 METERS apart, depending on terrain

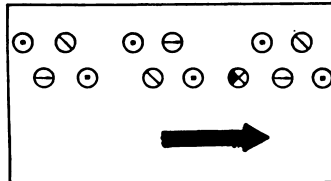
NOTE: Reduce distance for rugged terrain/dense vegetation.

- Squad leader is with lead fire team for navigation and control.



b. SUCCESSIVE BOUNDS: Enemy Contact Possible

- Trailing team drops behind lead team about 50 METERS to support lead team.
- NORMAL CONDITIONS - Leader stays with trailing team to provide control.
- LIMITED VISIBILITY - Leader moves with lead team to provide control.



c. ALTERNATING BOUNDS: Enemy Contact Expected

- One fire team advances while the other remains ready to suppress enemy fire.
- ALL MUST USE COVER AND CONCEALMENT.
- Team is positioned not more than 100 to 150 meters forward of the overwatch team (bound).
- Squad leader will move from one fire team to another:
 - Join overwatching team as the bounding team passes it, taking attached weapons with him.
 - Stay to the rear and on flank to drop off to the passing team.

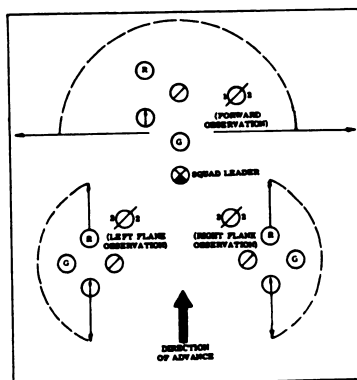


4. Issue the following instructions before a team bounds (Squad Leader):

- Tell overwatching team leader the route and destination of the bounding team.
- Tell bounding team leader where his team is to move, the route, and what he is to do when he gets there.
- Tell bounding team leader where squad leader and overwatching team will be and how to get next instructions.

B. Provide for all around security

- Assign each fire team a SECTOR OF OBSERVATION.
- Fire Team Leader: Assign a sector to each team member.
- Have team members orient their weapons toward their assigned sectors.



C. Make use of cover, concealment, and camouflage.

Use terrain analysis data (METT) and recommended camouflage and cover procedures to ensure concealment from the enemy.

D. Maintain distances between personnel/teams.

- Disperse personnel/teams as required by the terrain, mission, and selected movement technique (*Traveling Overwatch*, or *Bounding Overwatch*).
- Observe teams to ensure that members remain approximately 10 meters apart, and that teams maintain the required distance within the selected formation.

E. Control movement of personnel within teams.

- Ensure that squad/team members can see you at all times.
- Check to ensure that light and noise discipline procedures are performed by all members of the team.
- Use the following hand and arm signals to convey instructions to squad/team:

DECREASE SPEED

Extend the arm horizontally sideward, palm to the front, and wave arm downward several times, keeping the arm straight. Arm does not move above the horizontal.



CHANGE DIRECTION; OR COLUMN (RIGHT OR LEFT)

Extend arm horizontally to the side, palm to the front.



ASSEMBLE

Raise the hand vertically to the full extent of the arm, fingers extended and joined, palm to the front, and wave in large horizontal circles with the arm and hand.



FORM COLUMN

Raise either arm to the vertical position. Drop the arm to the rear, describing complete circles in a vertical plane parallel to the body. The signal may be used to indicate either a troop or vehicular column.



ARE YOU READY?

Extend the arm toward the leader for whom the signal is intended, hand raised, fingers extended and joined, then raise arm slightly above horizontal, palm facing outward.



I AM READY

Execute the signal ARE YOU READY.



SHIFT

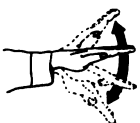
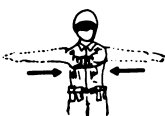
Raise the hand that is on the side toward the new direction across the body, palm to the front; then swing the arm in a horizontal arc, extending arm and hand to point in the new direction.

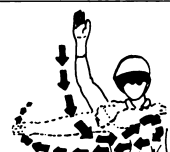


ECHELON RIGHT (LEFT)

Face the unit(s) being signaled and extend one arm 45° above and the other arm 45° below the horizontal, palms to the front. The lower arm indicates the direction of echelon. Supplementary commands may be given to ensure prompt and proper execution.



SKIRMISHERS (FIRE TEAM); LINE FORMATION (SQUAD) Raise both arms laterally until horizontal, arms and hands extended, palms down. If it is necessary to indicate a direction, move in the desired direction at the same time.	
WEDGE Extend both arms downward and to the side at an angle of 45° below the horizontal, palms to the front.	
VEE Extend arms at an angle of 45° above the horizontal forming the letter "V" with arms and torso.	
FIRE TEAM The right arm should be placed diagonally across the chest.	
SQUAD Extend the hand and arm toward the squad leader, palm of the hand down; distinctly move the hand up and down several times from the wrist, holding the arm steady.	
PLATOON Extend both arms forward, palms of the hands down, toward the leader(s) or unit(s) for whom the signal is intended and describe large vertical circles with hands.	
CLOSE UP Start signal with both arms extended sideways palms forward, and bring palms together in front of the body momentarily. When repetition of this signal is necessary, the arms are returned to the starting position by movement along the front of the body.	

OPEN UP: EXTENDED Start signal with arms extended in front of the body, palms together, and bring arms to the horizontal position at the sides, palms forward. When repetition of this signal is necessary, the arms are returned along the front of the body to the starting position and the signal is repeated until understood.	
DISPERSE Extend either arm vertically overhead; wave the hand and arm to the front, left, right, and rear, the palm toward the direction of each movement.	
I DO NOT UNDERSTAND Face toward source of signal; raise both arms sideways to the horizontal at hip level, bend both arms at elbows, palms up, and shrug shoulders in the manner of the universal "I don't know."	
FORWARD: ADVANCE; TO THE RIGHT (LEFT): TO THE REAR (USED WHEN STARTING FROM A HALT) Face and move in the desired direction of march; at the same time extend the arm horizontally to the rear; then swing it overhead and forward in the direction of movement until it is horizontal, palm down.	
HALT Carry the hand to the shoulder, palm to the front; then thrust the hand upward vertically to the full extent of the arm and hold it in that position until the signal is understood.	
FREEZE Make the signal for "Halt" and make a fist with the hand.	

INCREASE SPEED; DOUBLE TIME Carry the hand to the shoulder, fist closed; rapidly thrust the fist upward vertically to the full extent of the arm and back to the shoulder several times. This signal is also used to increase gait or speed.	
HASTY AMBUSH RIGHT (LEFT) Raise fist to shoulder level and thrust it several times in the desired direction.	
RALLY POINT Touch the belt buckle with one hand and then point to the ground.	
OBJECTIVE RALLY POINT Touch the belt buckle with one hand, point to the ground, and make a circular motion with the hand.	

RESOURCES:

FM FM 6-5, Marine Rifle Squad

FM 7-11B3/4, Soldier's Manual, Skill Levels 3 and 4

FM 7-8, The Infantry Platoon and Squad (Infantry, Airborne, Air Assault Ranger)

TASK: CALL FOR/ADJUST INDIRECT FIRE (G-0300-1.10/CPL)

ADMINISTRATIVE INSTRUCTIONS: This ITS has two training objectives: training objective one for locating the target and training objective two for calling for and adjusting indirect fire.

BATTLE DRILL(S): 18

TRAINING OBJECTIVE 1:

BEHAVIOR: Locate target

CONDITIONS: Conditions are determined by mission requirements. You will be provided: binoculars, map, compass, coordinate scale and a protractor.

STANDARD: You will locate a target suitable for indirect fire weapons and determine direction to the target for reporting to the FDC.

PERFORMANCE STEPS:**A. Locate target**

Select and use *one* of the following methods to locate the target:

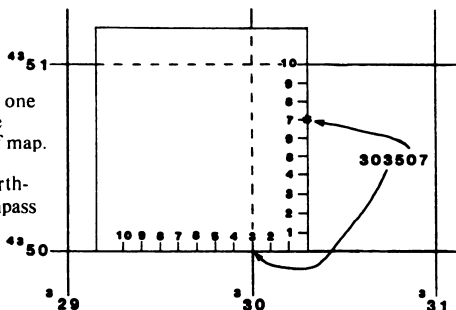
1. GRID COORDINATES METHOD:

a. Orient map using a compass.

- Place the compass straight edge along one of the north-south grid lines, with the compass cover pointing toward top of map.
- Rotate map and compass until the north-seeking arrow is aligned with the compass index line.

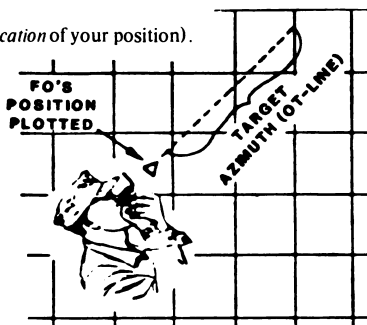
b. Pinpoint the target on your map.

c. Use plotting (coordinate) scale to determine the 6-digit coordinates.

**2. POLAR PLOT METHOD:**

(Use this method when FDC knows *exact* location of your position.)

- a. Using a compass, shoot an azimuth from your position to the target. This is the Observer-Target (OT) Line.
- b. Estimate the range from your position to the target. (See ESTIMATE RANGE (G-0300-1.4))

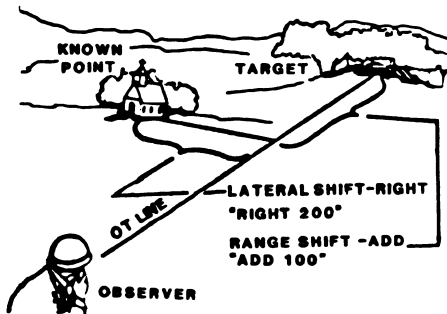


NOTE: The FDC will use your estimate to plot your position on the map, measure the same grid azimuth from your plotted position, and measure the range from your position along the azimuth to the target.

3. SHIFT FROM A KNOWN POINT METHOD:

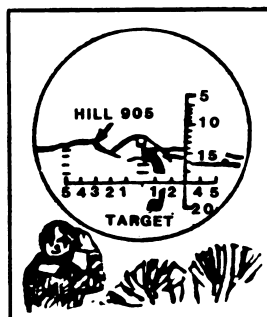
(FDC does *not* need to know the exact location of your position, however, known points, planned target locations or prominent terrain features should be identified prior to mission or patrol.

- a. Provide FDC with a list of *known points* and their location within your area.
- b. Identify to the FDC the known position from which you are shifting.
- c. Shoot an *azimuth* from your position to the target to establish an OT line.
- d. Then determine the *lateral shift* (right or left) from the known point to the OT line using one of these methods:



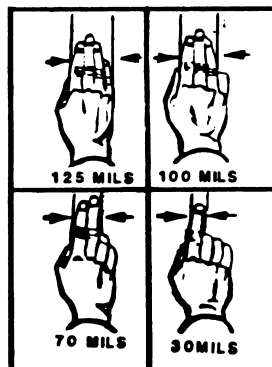
- BINOCULARS:

- Look through binoculars and focus on known point and target.
- Looking at the mil scale, count the number of 10-mil increments between the known point and the target.



- HAND-AND-FINGER METHOD

- Hold arm fully extended with finger(s) positioned between the target and the known point.
- Count the number of fingers it takes to cover the distance from the known point to the target.
- Refer to the chart to determine the deviation in mils according to the number of fingers used.



- e. Finally, estimate how far over or how short the target is from the known point (*range shift*). Use one of these methods:
- **Map inspection:** use the coordinate scale/protractor to measure distance from your position to the target.
 - **Visual estimation:** count the number of units of measure between you and the target.
 - Unit measurement based on 100-meter distance (i.e. football field).
 - The appearance of familiar objects (man, tank, etc.).

TRAINING OBJECTIVE 2:

BEHAVIOR: Call for/adjust indirect fire

CONDITIONS: You will be provided: binoculars, radio and appropriate call signs, map, compass, coordinate scale and an FDC and indirect fire weapons prepared to fire in response to the call for fire.

STANDARD: You will use target location data to prepare and transmit the call for fire, adjust rounds onto target, assess target damage and notify FDC of end of mission. Effect on target will be achieved within four rounds.

PERFORMANCE STEPS:

A. Prepare and transmit call for fire.

The call for fire will be sent to the FDC via three separate radio transmissions. Use the following format as a guide:

1. TRANSMISSION 1 - Observer Identification and Warning Order

- FDC call sign and your call sign (tell FDC *who* is calling for fire)
- Type of mission (Adjust Fire, Fire for Effect, Suppress Fire, or Immediate Suppression)
- Method of target location (Grid, Polar, Shift)

2. TRANSMISSION 2 - Target Location.

Announce to FDC *where* target is based on the target location method used:

- Grid Coordinate Method: Send 6 digit coordinate
- Polar Plot Method: Send grid direction and range to target
- Shift from Known Point: Send ID number for known point, direction, lateral and range shifts

3. TRANSMISSION 3 - Data to determine *type* and *amount* of fire:

- Description of target (what type)
- Method of engagement (how the target should be attacked and/or fire adjusted)
- Method of fire and control (*how* and *when* you want fire delivered)

(See chart below for sample messages for each of the three (3) transmissions)

EXAMPLE: TRANSMIT CALL FOR FIRE

ELEMENT	YOU SAY:
1. Observer Identification and Warning Order: (This message will reflect the <i>type</i> of fire mission selected)	
- Adjust Fire Mission (Target location uncertain or registration corrections needed)	"B2C, THIS IS T3D, ADJUST FIRE, OVER"
- Fire for Effect Mission (Rounds/fire has been adjusted to within 50 meters of target)	"B2C, THIS IS T3D, FIRE FOR EFFECT, POLAR, OVER"
- Suppress Fire Mission (To bring quick fire on inactive target)	"B2C, THIS IS T3D, SUPPRESS AA7749, OVER."
- Immediate Suppression Mission (To bring quick fire on target firing on friendly units)	"B2C, THIS IS T3D, IMMEDIATE SUPPRESSION AA7750, OVER."
2. Target Location (This message will give location based on the method used)	
- Grid Coordinate Method	"GRID 907453, OVER"
- Polar Plot Method	"DIRECTION 5420, DISTANCE 2400, OVER"
- Shift From Known Point	"FROM TARGET AH0101, DIRECTION 6380, MAGNETIC, RIGHT 200, ADD 100, OVER"
3. Data to determine type and amount of fire:	
a. Target Description (Provide all or parts of the following, as necessary)	
- What target is (troops, trucks, etc.)	"SQUAD IN OPEN TRENCH LINE"
- What target is doing	"PLATOON SIZE MOTOR PATROL, MOVING EAST, IN THE OPEN"
- Degree of protection	"POSITION ENGAGED IN FIRING, NO OVERHEAD PROTECTION"

ELEMENT	YOU SAY:
- Target size and shape	"COMPANY, TARGET EXTENDS FROM GRIDS 617194, TO 169198, TO 171194"

b. Method of Engagement

- | | |
|--|--|
| <ul style="list-style-type: none"> - Type of adjustment
(DO NOT announce this element unless rounds are within "danger close" range of friendly troops: <ul style="list-style-type: none"> — 400 meters for mortars — 600 meters for artillery — 750 meters for naval guns (5-inch or less) - Distribution of fire | <p>(NO MESSAGE needed if rounds do not endanger friendly troops)</p> <p>"DANGER CLOSE" (if rounds in range of friendly troops)</p> <p>"SEARCH"</p> <p>"TRAVERSE"</p> |
|--|--|

c. Method of Fire Control

- Tell FDC when you want fire delivered:
 - To control exact time to fire on target
 - To cancel the "AT MY COMMAND" request
 - To have rounds impact on target at a specific time
 - To fire on target that cannot be observed but is believed to be at a given location.

NOTE: After you transmit the CALL FOR FIRE, the FDC will determine how the target will be attacked, and will notify you in the form of a "message to observer" as to the method and if any changes have been made in your requests.

B. Adjust rounds onto target.

Select either the bracket or creeping method to adjust fire according to the location of friendly troops:

METHOD	SITUATION
BRACKET	If friendly troops are at least 600 meters from the target
CREEPING	If "Danger Close" situation exists or to provide Final Protective Fires
(See the following pages below on how to use the BRACKET and CREEPING methods.)	

BRACKET METHOD:1. Determine *deviation* adjustment:

- Spot each round to determine if it is too far to the right or left of the target.
(Rounds that impact on the OT line are spotted as LINE.)
- Use the *horizontal scale* of the binocular reticle to measure the angle of the deviation from the target to the OT line to the nearest 5 mils. (Begin measurement from the *center* of a single round or a group of rounds.)
- Determine the distance in *meters* that the burst should move to the right or left.
(Compute the deviation width using the WERM rule: $WIDTH = RANGE \times MIL\ ANGLE$):

- Convert OT distance (estimated range) to target into an OT Factor (express to the nearest thousands).

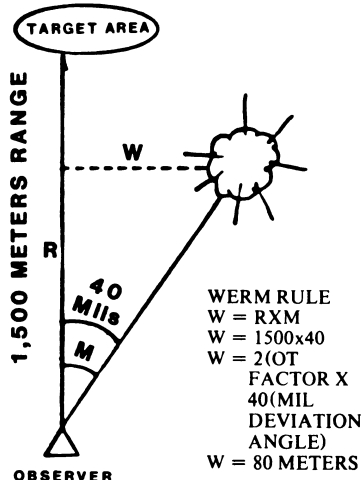
EXAMPLE:

OT distance = 4,200 meters

OT factor = 4

- Multiply the range (OT Factor) X the Mil Angle Deviation (see 1b above) to determine the deviation correction (to be expressed in meters)

NOTE: Use chart below to aid in determining deviation corrections for standard OT distances.



Use this chart to determine deviation corrections for standard OT distances:

EXAMPLE	OT DISTANCE (METERS)	OT FACTOR	SPOTTING	DEVIATION CORRECTION
1	4,000	4	45R	LEFT 180
2	2,500	2	100L	RIGHT 200
3	3,400	3	55L	RIGHT 160
4	1,500	2	20R	LEFT 40
5	700	0.7	45L	RIGHT 30

NOTE: OT distances of 1,500 and 2,500 meters are expressed to the nearest even OT factor

NOTE: Continue to use the same OT factor to make deviation corrections until the round is within 50 meters of the target.

2. Determine *range* adjustment:

- Spot each round to determine if it is over or short of the target. (Rounds that impact are spotted as **TARGET** or **RANGE CORRECT**.)
- If a range correction is necessary, add or subtract meters that would result in the next round impacting on the target.

Use the following guide to establish a bracket when adjusting range:

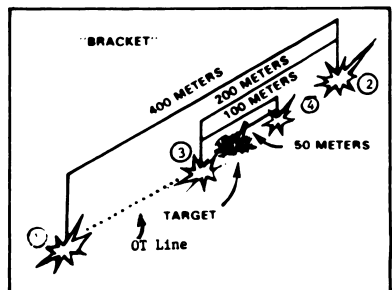
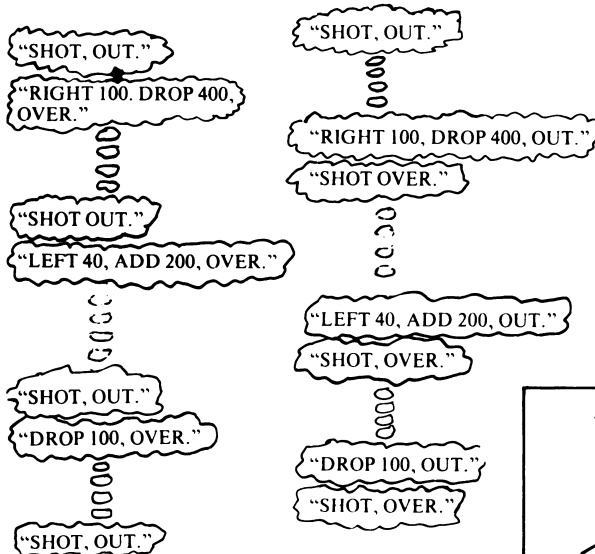
ROUND IMPACT FROM TARGET	ADD OR DROP
More than 400 meters	+ or - 800 meters
200 - 400 meters	+ or - 400 meters
100 - 200 meters	+ or - 200 meters
less than 100 meters	+ or - 100 meters

3. Transmit **DEVIATION** and **RANGE** corrections to the FDC using this message format:

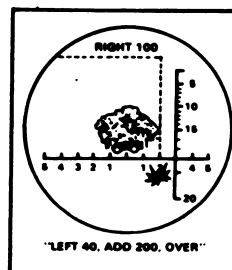
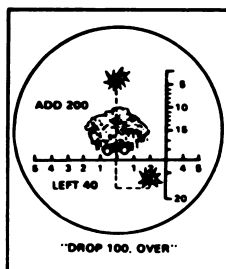
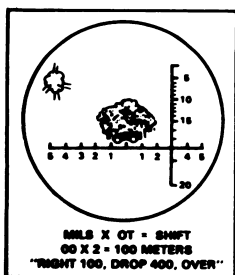
ADJUSTMENT PHASE

YOU SAY:

FDC SAYS:



This is what you will see through your binoculars as you call for fire adjustments:



CREeping METHOD:

(Use this method to adjust fire if friendly troops are determined to be in a DANGER CLOSE situation: Mortars within 400 meters, Artillery - 600 meters, or Naval Guns - 750 meters:

1. Use corrections of 100 meters or less to creep the rounds to the target when making range changes.
2. Track location of nearby friendly troops to ensure that round corrections do not endanger them.
3. Adjust firing elements individually.

NOTE: When round corrections are within 50 meters of the target (or if you actually hit the target) you are then ready to initiate the FIRE FOR EFFECT phase.

4. Initiate FIRE FOR EFFECT using the following message format:

FIRE FOR EFFECT PHASE
YOU SAY: FDC SAYS:

“ADD 50, FIRE
FOR EFFECT, OVER.”

“ADD 50, FIRE FOR
EFFECT, OUT.”

“SHOT, OVER.”

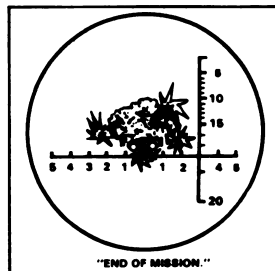
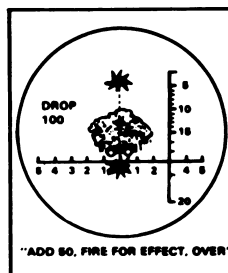
“SHOT, OUT.”

“ROUNDS COMPLETE,
* OVER.”

“ROUNDS COMPLETE,
OUT.”

“END OF MISSION, 20
CASUALTIES, REST OF
PLATOON DISPERSED,
OVER.”

“END OF MISSION,
20 CASUALTIES,
REST OF PLATOON
DISPERSED, OUT.”



-
- * Rounds complete means all rounds to be expended in FIRE FOR EFFECT have been fired.
-

D. Assess/report target damage.

1. Announce “END OF MISSION” (EOM).
2. Observe results of FIRE FOR EFFECT.
3. Report effects observed to the FDC:
 - number of casualties
 - damaged equipment
 - etc.

RESOURCES:

MCI Course 03.37d, Calling and Adjusting Supporting Arms
 MCI Course 03.31h, 81-mm Mortar NCO
 FM 6-30, Observed Fire Procedures
 FM 23-91, Mortar Gunnery
 FM 7-11B1, Soldier's Manual Skill Level 1
 ST-21-75-2, Ranger Handbook

TASK: PREPARE TERRAIN SKETCH/MODELS (G-0300-1.11/SGT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a 1:50,000 scale military map. Materials to use in preparing the sketch/model are at your discretion.

STANDARD: The terrain sketch/model will be in sufficient detail so that those being briefed can understand what it represents.

BATTLE DRILL(S): 1

PERFORMANCE STEPS:**A. Estimate situation.**

(See ESTIMATE SITUATION (0-300-14.1))

Study/evaluate the following factors in order to prepare the terrain sketch/model:

MISSION	Who?, What?, When?, Where?, Why?, and How?	
	NOTE: You will determine the "How" and include this in the sketch/model.	
ENEMY	Strength Composition Location	Type Weapons Tactical Methods Recent Actions
TIME	Schedule for planning and execution (begin/end) of mission	
TROOPS and FIRE SUPPORT AVAILABLE	Strength/location of your unit(s) Type of fire support (Mortars, artillery, air, etc.)	
TERRAIN and WEATHER	<u>Study map, terrain, and/or photos to determine:</u> -Key terrain -Observation and fields of fire -Cover and concealment -Obstacles -Avenues of approach	

B. Prepare terrain sketch/model.

NOTE: The terrain sketch/model should provide as accurate and detailed a picture of the situation (mission) as time and ground area will allow.

1. Select a ground area large enough to present all information to be included in the sketch/model.
2. Completely clear the ground area of all leaves, sticks, grass, etc.

NOTE: Everything on the model must represent something. Any extra objects will only confuse your patrol members.

3. Collect and prepare materials to be used in preparing the sketch/model: (sticks, rocks, moss, leaves, MRE boxes, etc.).

EXAMPLES: Label MRE or ammunition boxes to represent patrol members, targets, etc.

4. Build the terrain model as follows:

(Use data obtained from evaluation of METT factors)

- a. Orient cleared area to ensure that north on the model is pointing in the same direction as north on the ground.

- b. Place a north-seeking arrow on the model.

- c. Position rocks and draw trenches, etc.(on model) to show shape and height of terrain features.

- d. Position moss, leaves, pine needles etc. to show vegetation/trees that patrol will move through.

- e. Use sticks and/or draw line on ground to show roads and trails.

- f. Show all man-made features: buildings, railroads, powerlines, etc.

- g. Mark all friendly positions, mine-fields, obstacles, etc. and the lanes to be used to move through these barriers.

- h. Mark all known or suspected enemy positions.

- i. Draw primary and alternate routes to be used by the patrol. Indicate checkpoints on the route.

- j. Using data from the fire support unit, write target number on ammo box and place box(es) on model to show location of artillery targets.

- k. Prepare written labels for the following, and position labels on model:

- Point of Departure (POD) and Point of Return (POR)
- Check Points
- Objective Rally Point (ORP)
- The Objective
- Artillery Targets

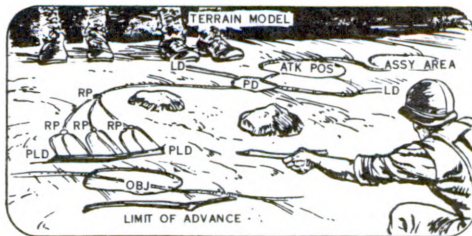
5. Using paper and pencil, prepare a legend to show what each object on the terrain model represents.

C. Use sketch/model to present orientation and five-paragraph order.

1. ORIENTATION:

The orientation sets the stage and provides the background necessary for patrol members to better understand the patrol order. Provide the following information:

- a. A thorough terrain analysis of your area of operation based on KOCOA data.



- b. Discuss each aspect of the terrain from both the friendly and enemy point of view and how each aspect affects the mission.
 - c. Explain terrain model/sketch, emphasizing key terrain features and all objects included on the model (use legend to indicate what each item represents).
2. Present and prepare patrol order (mission briefing) using the 5-paragraph format used for operation orders: (See PLAN PATROL 0300 - 14.3)

Paragraph 1 - SITUATION

Paragraph 2 - MISSION

Paragraph 3 - EXECUTION

Paragraph 4 - ADMINISTRATION and LOGISTICS

Paragraph 5 - COMMAND and SIGNAL

NOTE: Emphasize (in detail): MISSION and EXECUTION

RESOURCES:

FM 7-11B 3/4, Soldier's Manual, Skill Levels 3 and 4
FC 7-14, Light Infantry Company Operations and ARTEP Mission Training Plan (AMTP)
FMFM 1-2, Marine Troop Leader's Guide
MCI Course 03.46c, The Marine Squad Leader: Combat Planning and Orders

TASK: PROCESS KNOWN OR SUSPECTED ENEMY PERSONNEL (POWs) (G-0300-2.3/PFC)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: weapons, documents, equipment held by personnel acting as POWs and POW tags.

STANDARD: Correct procedures will be followed in processing the POWs. You will find all documents planted on the POWs, segregate them according to rank, guard (or cause another Marine to guard) them, and evacuate them and/or their weapons and equipment/documents to a position designated by the evaluator. POWs must not be physically abused.

BATTLE DRILL(S): 18, 19, 27

PERFORMANCE STEPS:

A. Search POWs.

1. Take the POWs weapon prior to beginning the search.

NOTE: Have one Marine guard the POW while you search him. DO NOT get between the POW and the guard at any time!

WARNING: If POW is lying on ground when approached, proceed cautiously as you lay next to him to roll him over, keeping him between you and a grenade, weapon, etc. concealed under him.

2. Have POW spread-eagle against a tree or wall, or get into a pushup position with his knees on the ground.
3. Search POW from head to toe, looking in pockets, pouch/container and pat search all other areas.
4. Take weapons and papers except identification papers and protective masks.
5. Give written receipt for any property taken.
6. Tag personal property and documents to know which prisoners had them. Provide the following information on tag or piece of paper:



DOCUMENT OR EQUIPMENT TAG	
	TYPE DOCUMENT/EQUIPMENT _____
	DATE/TIME CAPTURED _____
	PLACE OF CAPTURE _____ (grid coordinates)
	CAPTURING UNIT _____
	CIRCUMSTANCES OF CAPTURE _____ (how it happened)
PW FROM WHOM TAKEN _____	

B. Segregate POWs.

- Commissioned Officers
- Noncommissioned Officers

- Enlisted Personnel
- Civilian Combatants

C. Silence POWs.

(This step is performed throughout process of POWs to begin w/separation procedures.)

DO NOT let POWs talk to each other to prevent planning for escape, etc. Use gag, tape, etc., if necessary.

D. Speed POWs to rear.

Turn POWs, captured gear and documents over to your leader as soon as possible so that they can be transported to the interrogation area.

E. Safeguard POWs.

1. Do not allow anyone to abuse prisoners.
2. Protect prisoners from hazards of enemy fire.
3. Do not allow anyone to give POWs food, water, or cigarettes unless authorized by assigned interrogator.
4. If a POW is wounded and cannot be evacuated through normal channels, turn him over to a medical corpsman for treatment, ensuring that he is guarded and that security precautions are exercised.

F. Tag POWs.

1. Write the following on the POW tag or piece of paper:
 - a. Capturing Unit (complete unit identification)
 - b. Date and Time of Capture
 - c. Place of Capture (grid coordinates or reference from a known point)
 - d. Circumstances of Capture (how POW was captured)

POW TAG	
	DATE/TIME OF CAPTURE _____ PLACE OF CAPTURE _____ CAPTURING UNIT _____ CIRCUMSTANCES OF CAPTURE _____ (how it happened)

2. Tie tag securely around prisoner's neck or arm if hands are tied behind back.

RESOURCES:

FM 21-75, Combat Skills of the Soldier, Skill Level 1
 MCI Course 03.70, The Marine Rifleman - Combat Skills

TASK: ENGAGE TARGET WITH SERVICE RIFLE USING FIELD FIRING TECHNIQUES (G-0300-4.2/Pvt)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: an M16A2 service rifle, magazine and ammunition.

STANDARDS: The target must be engaged using frontal, flanking, oblique, enfilade, grazing, plunging and overhead fire, if the range permits. You must also make maximum use of cover and concealment.

BATTLE DRILL(S): 16

PERFORMANCE STEPS:

A. Detect target.

1. Perform *hasty search* of the area:

- When you move into a new area, do a 30-second *visual search* of the terrain to check for enemy activity.

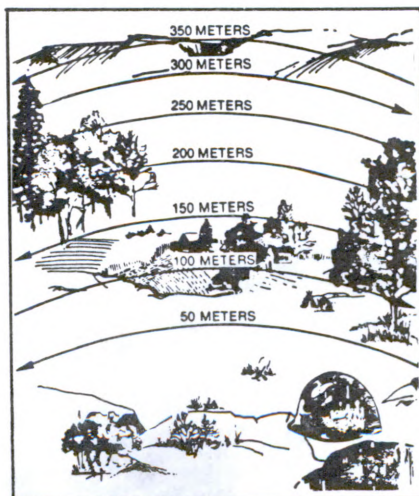
2. Perform a *detailed search* of the area using the 50-meter overlapping strip method:

a. Beginning with the terrain nearest your position and at either flank, visually scan the area in 180-degree arc and 50 meters distance at a time.

b. Search each 50-meter distance from flank to flank using a 10-meter overlap to ensure that all areas are surveyed.

c. Look or listen for the following target indicators:

- Sound
- Terrain features that may offer cover and concealment for the enemy
- Improper camouflage
- Movement on the terrain
- Outlines that contrast with the background
- Shine of metal objects



3. Maintain surveillance over the area:

a. After completing the detailed search, continue to glance at various points, focusing on specific features (rocks, trees, trenches, etc.).

b. Repeat all steps in the *detailed search* periodically and anytime you have been distracted from your area.

B. Engage target.

1. Identify the type of target and use the correct procedures for engaging the specified type:

I
STATIONARY TARGETS

- Stay concealed.
- Locate enemy.

II
MULTIPLE TARGETS

- Stay concealed.
- Locate and mark all enemy positions.
- Engage enemy position which represents the greatest threat first.
- Engage other targets in rapid succession.

III
MOVING TARGETS

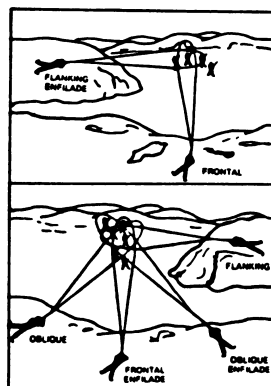
- Concentrate on location of most prominent target.
- Note point of disappearance of target.
- Locate as many targets as possible so as to engage each in rapid succession.
- When space exists between targets, engage the one nearest you first.

NOTE: Consider speed but emphasize accuracy.

2. Select correct fire procedures according to the position of **TARGET** and **TERRAIN FEATURES**:

- a. Fire with respect to the **TARGET** using one or more of the following fire procedures:

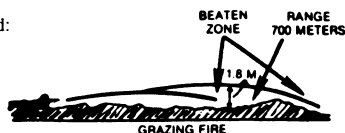
- **FRONTAL:** Deliver fire at a right angle to the front of the target.
- **FLANKING:** Deliver fire against the rear of the target.
- **OBLIQUE:** Fire at a 45° angle from the long axis of the target (neither flanking or frontal).
- **ENFILADE:** Use this fire when the long axis of the beaten zone is the same as the long axis of the target (neither frontal or oblique).



- b. Fire with respect to the **SLOPE** of the ground:

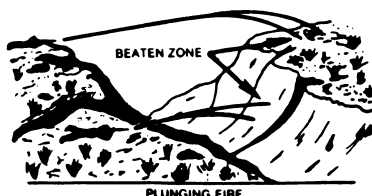
- **GRAZING:** Fire over level terrain or uniform slope.

NOTE: This fire should not rise above 1 meter.



- **PLUNGING:** Fire from high ground to a target on low ground.

NOTE: Confine this fire to the area of the beaten zone so as to shorten the length of this zone.



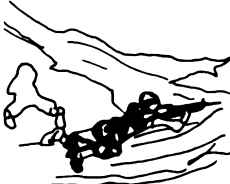
- **OVERHEAD:** Deliver fire over the heads of friendly troops.

CAUTION: Do not fire until you are sure that the ground protects friendly troops to the front, or that they are sufficiently below the line of fire.

C. Take immediate action.

1. Select and assume a good fighting position for engaging a target. Ensure that the position provides for the following:

- Cover and/or concealment
- Good observation point(s)
- Steadiest possible firing position

POSITION/LOCATION	PROCEDURES	
Fighting hole (foxhole) or bunker	- Adjust to best fit your height. - Support arms on parapet assume a good firing position.	
Rubble pile	- Present low silhouette behind rubble. - Achieve maximum support in firing position.	
Kneeling supported	- Assume good kneeling position. - Shift weight forward until your left shoulder, left arm, and left leg come in contact with the support (tree, wall, pole). NOTE: Do not support your rifle against support because this will limit your ability to shift point of aim and recovery between shots	
Log (prone position)	RIGHT-HANDED SHOOTERS: - Fire from right end of log for maximum cover. LEFT-HANDED SHOOTERS: - Fire from left end of log for maximum cover.	

Prone supported

- Assume a prone position.
- Adjust position to fit available support and place your forearm (left/right) against the support (log, parapet, etc.).

Wall or barricade

- Assume a position which permits you to fire.
- Present a low silhouette.

NOTE: Height of position will depend on height of wall or barricade.



Forward slope

- Assume standard sitting position.
- Adjust body to slope of the mound or hill.

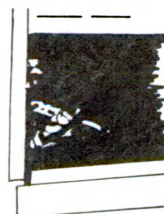
Rooftop

- Place your left or right arm over apex of roof so it can hold your body weight.
- Present a low silhouette with your head and shoulders.



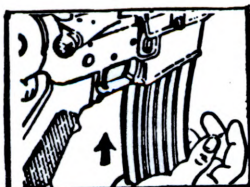
Window

- Remain back away from the window.
- Do not let rifle protrude through window.



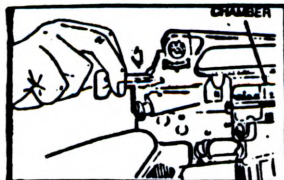
2. Take immediate action if rifle (M16A2) stops firing:

- SLAP upward on the bottom of magazine to fully seat it.



- PULL charging handle to the rear.

WARNING: DO NOT load with a hot chamber!



- c. **OBSERVE** ejection port to see if casing or cartridge is ejected.

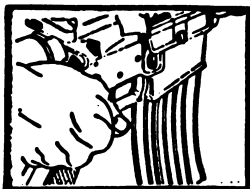
NOTE: If nothing is ejected, check the chamber to ensure that it is clear. If empty, change magazines.

- d. **RELEASE** charging handle to feed a new round.

NOTE: DO NOT ride the handle forward.



- e. **TAP** the forward assist to ensure that the bolt is fully forward and locked.



- f. **SHOOT** (attempt to fire).

RESOURCES:

FMFM 1-3A, Field Firing Techniques
TM 05538C-10/1, 5.6mm, M16A2

TASK: ENGAGE TARGET WITH GRENADE LAUNCHER USING LIMITED VISIBILITY TECHNIQUES (G-0300-5.5/PVT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: assigned sector of fire, M203 grenade launcher, field firing range, 7 rounds of 40mm HE DP or practice ammunition, and stakes.

STANDARD: Planned targets must be engaged during darkness. Stakes must be emplaced to indicate limits, elevation, and deflection.

BATTLE DRILL(S): 16

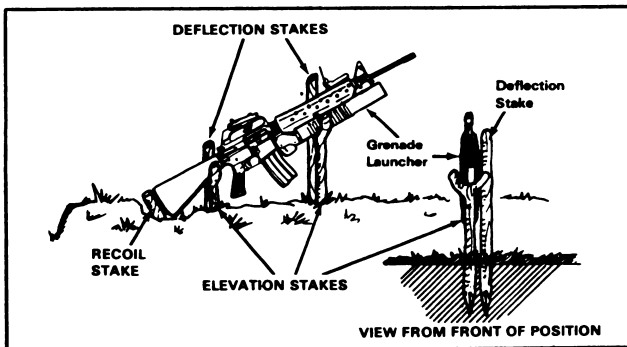
PERFORMANCE STEPS:

A. Prepare field expedient stakes.

NOTE: Use five sturdy stakes from 1/2-inch to 2 inches thick and 2 feet long.

B. Emplace stakes to position launcher.

1. Place the launcher on the ground with the muzzle pointing at the target and the buttplate at your position.
2. Scoop out a small amount of earth, creating a small hole where the buttplate touches the ground.
3. Place the toe of the buttplate in the hole.
4. Get into your fighting position.
 - Raise the muzzle of the launcher.
 - Look through the quadrant sight.
 - Adjust the elevation of the muzzle until you get the correct sight picture.



5. Drive a stake into the hole directly behind the buttplate. This stake acts as the recoil stake.

6. Drive two stakes into the ground to hold the launcher at the correct elevation angle—one stake under the barrel assembly and the other under the small of the stock.
7. Drive two longer stakes into the ground to hold the launcher at the correct deflection angle—one stake alongside the elevation stake nearest the barrel assembly, and the other alongside the elevation stake at the small of the stock.

NOTE: Stakes must be emplaced to indicate elevation and deflection. Deflection stakes should extend no more than an inch or two above the barrel assembly/small of the stock.

C. Fire at targets.

1. Locate within your sector of fire possible targets, deadspace, likely avenues of enemy approach, and likely enemy assault positions.
2. Estimate the range to the located targets by using any of the following methods:
 - Pacing
 - Map distance
 - Naked eye
3. Place the range that you estimate to the target(s) on the quadrant sight.
4. Look through the quadrant sights on the launcher and, if necessary, move the stakes until you get the correct sight picture.
5. Fire a grenade and observe impact.

D. Adjust sights.

If necessary, change the positioning of the weapon (if the tactical situation permits).

E. Prepare range card.

Indicate the following on your range card:

- Principal direction of fire (PDF)
- Targets and ranges to them
- Prominent terrain features
- Weapons symbols
- Marginal data

RESOURCES:

FMFM 6-5, Marine Rifle Squad
 OH 6-6, Marine Rifle Squad
 FM 7-11B1, Soldier's Manual, Skill Level 1

TASK: INSPECT HAND GRENADES (G-0300-8.1/PVT)
MAINTAIN HAND GRENADES (G-0300-8.2/PVT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: hand grenades in unopened canisters.

STANDARD: Identify discrepancies and defects and correct where possible.

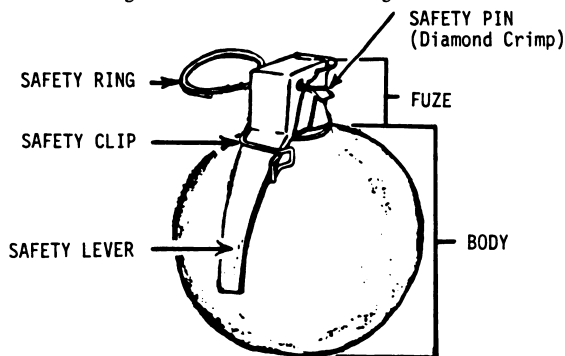
BATTLE DRILL(S): 1, 28

PERFORMANCE STEPS:

A. Inspect the following parts of the grenade and correct, if possible, any defects found:

INSPECTION PROCEDURES	CORRECTION PROCEDURES
1. Check safety pin to ensure that it is not bent or partially removed.	BENT PIN: Carefully bend back into position. PARTIALLY REMOVED PIN: Hold lever securely down and carefully push pin into place.
2. Ensure that diamond crimp is open.	Open crimp to prevent pin from falling out.
3. Ensure that safety clip is in the correct position: - Loop portion of clip should be around the grenade fuze. - Clip end should be snapped around the grenade safety lever.	DO NOT use grenade if safety clip is missing. Carefully re-position safety clip.
4. Ensure that safety lever (spoon) is not cracked or broken. - Check lever (spoon) to ensure that mud is not caked around/under it.	DO NOT use grenade. Turn it in.* Carefully remove mud, etc. using available tools.
5. Ensure that fuze is seated firmly on grenade.	Screw fuze tightly into body of grenade.
6. Ensure that safety ring is not cracked.	DO NOT use grenade. Turn it in.*

***NOTE:** Follow unit SOP for turning in unserviceable or defective grenades.



RESOURCES:

FM 21-2, Soldier's Manual of Common Tasks, Skill Level I
 Guidebook for Marines

TASK: ENGAGE TARGET WITH HAND GRENADES (G-0300-8.3/PVT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: grenades and grenade range with target.

STANDARD: Grenade must explode within the effective bursting radius for the target as listed below. The Marine must not expose himself for more than 5 seconds.

TARGET

Troops in open
Troops w/overhead cover
Troops dug in w/o overhead cover

EFFECTIVE ENGAGEMENT

Within 5 meters of center
Inside of enclosure
Inside of position

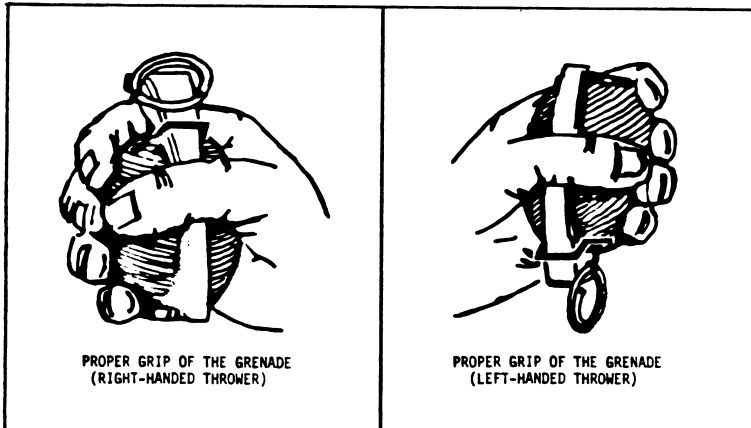
BATTLE DRILL(S): 16, 21

PERFORMANCE STEPS:**A. Estimate range.**

Observe the target to establish the distance between you and the target area.

B. Grip grenade.

1. Grip the grenade firmly in the fingers of the throwing hand as shown below:



2. Hold the safety lever down firmly under the thumb.

NOTE: Left-handed throwers should ensure that the top of the fuze points *down*.

3. Place forefinger of throwing hand near top of grenade body.
4. Prepare to throw grenade.

C. Assume position, remove safety clip, and throw grenade.

Select one of the following positions for throwing grenades:

1. STANDING POSITION

This position allows for the greatest throwing distance:

- a. Stand half facing the target with your weight balanced evenly on both feet.
- b. Hold grenade in front of body, chest high, and remove the safety clip.
- c. Hook forefinger of the other hand through the safety ring attached to the safety pin.
- d. Remove safety pin by pulling and twisting the safety ring.
- e. Throw grenade and follow through by stepping forward as you throw.
- f. Fall forward, face down upon the ground.

NOTE: When possible, keep your eye on the target to observe the strike of the grenade as you fall to the prone position.

2. KNEELING POSITION

Use this position when you have a low wall, shallow ditch, or similar cover for protection:

- a. Hold grenade shoulder high, half face the target, and kneel on the knee nearest the target.
- b. Remove the safety clip.
- c. Hook forefinger of the other hand through the safety ring attached to the safety pin.
- d. Remove the safety pin.
- e. Throw the grenade and continue to fall forward, breaking the fall with the arms.

NOTE: Watch the strike so as to make corrections, if necessary, in the next throw.

3. KNEELING FROM PRONE POSITION

Use this position when no cover is available and the grenade must be thrown a greater distance than is possible from the prone position.

CAUTION: DO NOT rest the weight of the body on the grenade as this might damage the safety pin or fuze.

- a. Face target and assume prone position.
- b. Hold grenade in front of the body and remove the safety clip.
- c. Hook forefinger of other hand through the safety ring.
- d. Move hands along both sides to the shoulders and raise the body quickly, pushing upward and to the rear.
- e. If throwing right-handed, leave the left knee on the ground and bend the right leg slightly so that the body can twist. (Reverse procedures for left-handed throwers.)
- f. Twist and pull safety ring to remove safety pin and throw the grenade.

g. Throw the grenade and follow through, falling to the ground, breaking the fall with the arms.

h. Watch the strike.

4. PRONE POSITION

Use this position when pinned down by hostile fire and unable to rise to engage target:

a. Lie on back, hold the grenade across the chest, and pull the pin.

b. Hold on to any substantial object while throwing in order to improve range and accuracy.

c. Release grenade and roll on the stomach to complete follow-through.

RESOURCES:

Guidebook for Marines

FM 23-30, Grenades and Pyrotechnic Signals

FM 21-2, Soldier's Manual of Common Tasks, Skill Level 1

TASK: INSTALL AND FIRE OR RECOVER M18A1 CLAYMORE MINE (G-0300-9.1/PVT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: an M-7 bandoleer containing an M18A1 Claymore mine (inert), M57 firing device, M40 test set and firing wire with blasting cap (inert).

STANDARD: The mine will be installed and recovered according to performance steps, with the mine and firing wire camouflaged so it is nondetectable by the observer.

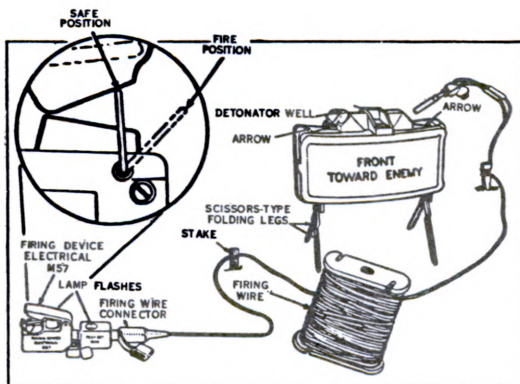
BATTLE DRILL(S): 15, 19, 28

PERFORMANCE STEPS:**A. Test circuit to ensure it is functioning.**

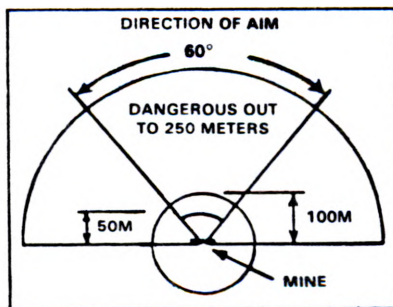
WARNING: During installation, the M57 firing device must be kept by the Marine installing the mine to prevent accidental firing by another Marine.

WARNING: Place blasting cap behind a tree, in a hole, or under a large rock to avoid injury in case the blasting cap detonates during the circuit check.

1. Take cover at firing position.
2. Remove dust cover from test set and firing device, and remove shorting plug from blasting cap wire.
3. Insert plug of blasting cap wire into test set.
4. Insert plug of test set into firing device.
5. Swing safety bail to FIRE position.
6. Depress firing handle and watch window of test set for a flash of light which indicates good circuit.

**B. Position mine.**

1. Tie shorting plug end of the firing wire to a fixed object (stake, tree) at the firing position.
2. Select site within 250 meters of the desired sector of fire (kill zone).



CAUTION: Ensure that friendly troops are not within 16 meters (53 ft) of the rear of the mine. If within 100 meters of rear, ensure that cover is available.

3. Place bandoleer on your shoulder and unroll the firing wire to the selected position for emplacing the mine.
4. Remove mine from bandoleer. Open both pairs of legs to a 45-degree angle with two legs facing to the front and two legs facing to the rear of the mine.
5. Position the mine on the ground with the words "FRONT TOWARD ENEMY" pointing toward the kill zone.
6. Push legs about one third of the way into the ground.

NOTE: To prevent tipping in windy areas, or when legs cannot be pressed into ground, spread the legs to the maximum (about 180 degrees).

C. Aim mine.

1. Using the SLIT-TYPE PEEP SIGHT, select an aiming point (tree, rock) about 50 meters (150 feet) to the front of the mine and about 2 1/2 meters (8 feet) above the ground.

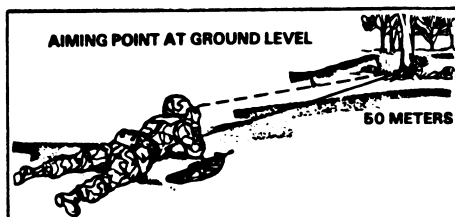
- Position the eye about 6 inches to the rear of the sight and aim the mine toward the center of the target area.



NOTE: The groove of the sight should be in line with the aiming point.

2. Using the KNIFE-EDGE SIGHT, select an aiming point at ground level about 50 meters (150 feet) in front of the mine.

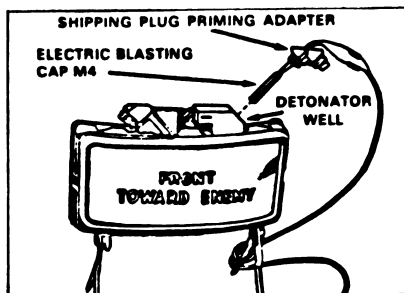
- Position the eye about 6 inches to the rear of the sight and align the two edges of the sight with the aiming point.



D. Arm mine.

1. Unscrew one of the shipping plug priming adapters from the mine (keep it for later use).
2. Carefully slide the slotted end of the priming adapter onto the firing wire of the blasting cap between the crimped connection and the blasting cap.
3. Insert the blasting cap into the detonator well and screw on the adapter.

CAUTION: To avoid premature detonation do not drop the blasting cap! Also, point the cap out and away from the body.



4. Secure firing wire about 1 meter to the rear of the mine so that the mine will not become misaligned if wire is disturbed.

E. Camouflage mine and firing wire.

1. Camouflage the mine (leaves, sticks, etc.).
2. Bury firing wire, if possible.

F. Fire mine.

1. Ensure that safety bail on firing device is in SAFE position until ready for use.

NOTE: In training situation, do not leave firing device connected to the firing wire until actual time of firing.

2. When the lead element of enemy formation approaches within 20 to 30 feet of mine, position firing device safety bail to the FIRE position.
3. Squeeze firing device handle with a firm, quick squeeze when the enemy is within range.

G. Recover mine.

1. Place the firing-device safety bail in the SAFE position.
2. Disconnect firing wire from the firing device and replace dust covers.

NOTE: Ensure that you keep the firing device with you throughout the recovery process.

3. Unscrew and remove the priming adapter from the mine.
4. Remove the blasting cap from the priming adapter—then—
5. Screw the adapter back into the detonating well.
6. Remove the firing wire from the stake, reroll it, and place wire and cap inside cardboard container.
7. Recover mine and repack it and accessories into the bandoleer.

RESOURCES:

FM 21-75, Combat Skills of the Soldier
 FM 21-2, Soldier's Manual of Common Tasks, Skill Level 1
 MCI Course 03.72, The Marine Rifleman: Weapons
 Guidebook for Marines

TASK: INSTALL AND RECOVER M18A1 CLAYMORE MINE WITH TRIPWIRE(S) (G-0300-9.2/PVT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: an M-7 bandoleer containing an M18A1 Claymore mine (inert), M1 firing device(s), nonelectric blasting cap(s) (inert), a length of detonating cord, roll of tape and M2 crimpers.

STANDARD: When installed, the mine will provide coverage of the desired area. The mine will be properly installed and recovered, with the mine and tripwire(s) camouflaged so as not to be detectable by the casual observer.

BATTLE DRILL(S): 15, 19, 28

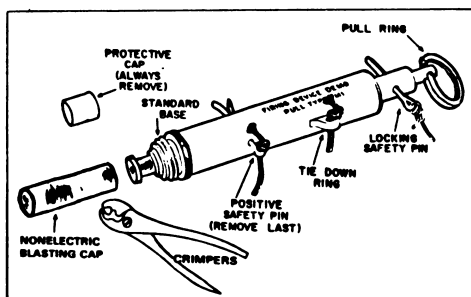
PERFORMANCE STEPS:

A. Install the mine.

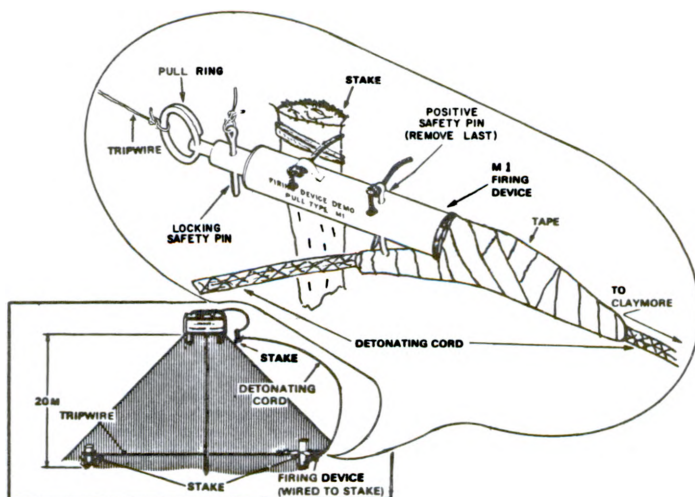
1. Locate a specific site for the mine.
 - a. Defense - Select site within the most likely avenue of approach.
 - b. Offense - Select ambush site.
2. Position and aim the mine.
 - a. Position the mine to cover the desired kill zone (not more than 250 meters from the target area).
 - Ensure that the surface marked "FRONT TOWARD ENEMY" and the arrows on top of the case are pointing toward the target area.
 - Press legs approximately halfway into the ground.
 - b. Aim the mine using correct procedures for one of the following:
 - SLIT-TYPE PEEP SIGHT (See Task G-0300-9.1)
 - KNIFE-EDGE SIGHT (See Task G-0300-9.1)
3. Install firing device.

WARNING: To avoid detonation of the cap, do not place crimper jaws any closer than within 1/4 inch of the explosive (closed) end of the blasting cap.

- a. Emplace two anchor stakes, about 20 meters to the front of the mine, and space them 10 to 20 meters apart.
- b. Remove protective cap from firing device.
- c. With crimpers, attach blasting cap to the standard base.



- d. Tape one end of detonating cord to the firing device end containing the nonelectric blasting cap.
- e. Fasten firing device to one of the stakes, using tape, wire, or cord.



4. Attach tripwire.
 - a. Attach a length of tripwire to the opposite stake, and unroll the wire as you move back to the stake holding the firing device.
 - b. Attach the tripwire to the pull ring of the M1 firing device.
 - c. Ensure that tripwire is pulled tight enough and secured so that it does not droop when pressure is applied.
5. Repeat steps 3 and 4 if more than one tripwire is to be used.
6. Arm the mine.
 - a. Move to the mine and emplace a third stake slightly to the side of the mine, toward the side containing the firing device.
 - b. Wrap the loose end of the detonating cord securely around the stake, leaving at least 1 meter of cord overhang.
 - c. Carefully insert the loose end of the detonating cord into a nonelectric blasting cap and crimp.
 - d. Seat the cap (with detonating cord) in the shipping plug priming adapter and carefully insert the cap into the well.
 - e. Carefully screw the shipping plug priming adapter into the well.
 - f. Recheck the mine for proper aim.

7. Remove the safety pin from firing device(s).
 - a. Return to the firing device and with the attached string carefully pull out the locking safety pin first.
 - b. Then, carefully pull attached string to remove the positive safety pin.

NOTE: If any difficulty is encountered, replace all safety pins and the firing device.

8. Camouflage mine, firing device(s) and tripwire(s) using available natural elements (leaves, etc.).
9. Inform unit leader and personnel in surrounding area of location of mine and tripwire(s).

B. Recover the mine.

1. Disarm the firing device.

CAUTION: Before attempting to disarm the mine, determine the location and configuration of other nearby mines.

WARNING: IF AT ANY TIME THE MINE APPEARS DAMAGED OR ALTERED, CONSIDER IT UNSAFE. REPORT IT TO YOUR TEAM LEADER.

- a. Inspect the mine and attached tripwires to determine if they have been altered, damaged, or boobytrapped.
 - b. Insert the locking safety pin in safety pin hole on the firing device.
 - c. Cut the detonating cord free of the M1 using crimpers.
 - d. Disconnect the tripwires.
 - e. Recover the firing device, stakes, and tripwire.
2. Disarm the mine.

WARNING: To prevent detonation, exercise the same caution in handling the blasting cap as in arming the mine.

- a. Cut the blasting cap free of the detonation cord. g
 - b. Unscrew and remove the shipping plug priming adapter containing the blasting cap from the mine.
 - c. Remove the blasting cap attached to the detonating cord, reverse the shipping plug priming adapter, and screw it back into the detonator well.
3. Replace the Claymore in its carrying pouch.
4. Repack the firing device.
5. Turn in detonating cord and crimped blasting caps to your team leader.

RESOURCES:

FM 7-11B1, Soldier's Manual, Skill Level 1

FM 21-75, Combat Skills of the Soldier

MCI Course 03.72, The Marine Rifleman: Weapons

TASK: INSTALL AND FIRE OR RECOVER M16A1 ANTIPERSONNEL MINE (WITH OR WITHOUT TRIPWIRES) (G-0300-9.3/PVT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: an M8A1 practice mine w/fuze M10A2, smoke pellets, replacement mine plug, an entrenching tool and/or bayonet, and an M25 fuze wrench.

STANDARD: The mine will be installed without detonating during emplacement. When the mine is installed with tripwires, the smoke pellets should activate when tripwire is engaged. If recovery is required, igniter assembly must not fire during recovery process. Mine and tripwire (if used) must be camouflaged so as not to be detected by the casual observer.

BATTLE DRILL(S): 19, 28

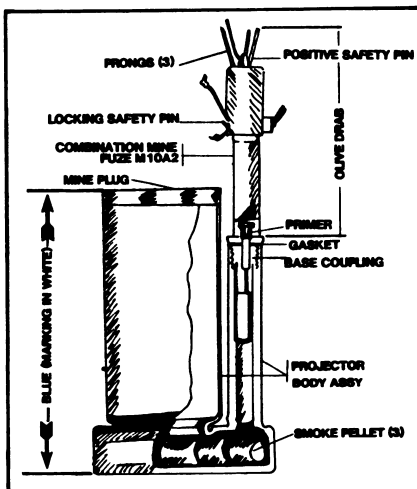
PERFORMANCE STEPS:

A. Install the mine without tripwires.

1. Inspect the mine to ensure that all parts are present and serviceable. Do the following:
 - a. Unscrew the shipping plug from the fuze well using the closed end of the M25 fuze wrench.

NOTE: Keep the shipping plug for future disarming of mine.

- b. Inspect the fuze well and flash tube. If foreign matter is present, turn mine upside down and gently tap its bottom.
 - c. If the mine is dented, cracked, or damaged, do not use it.
2. Attach firing mechanism to igniter assembly.
3. Install fuze assembly.
 - a. Set mine down and take a fuze out of the fuze box.
 - b. Inspect the fuze for damage and for missing safety pins.
 - c. Check safety pins to ensure that they move freely in the pin holes.
 - d. Ensure that the rubber gasket is around the fuze case.
 - e. Using the open end of the wrench, tighten the bushing adapter on the fuze well, if necessary.
 - f. Screw the fuze assembly into the fuze well with the fuze wrench and tighten it securely against the rubber gasket.



4. Emplace smoke pellets in mine.
 - a. Remove polystyrene plug from top of mine.
 - b. Insert three smoke pellets into mine cavity.
 - c. Replace plug.
5. Emplace mine.
 - a. Dig a hole about 6 inches deep and 5 inches in diameter.
 - b. Place mine in the hole.
 - c. Cover the mine with dirt, pressing the dirt firmly into place, and leaving the release pin and pressure prongs exposed.
 - d. Arrange the pull cords on the safety pins for easy withdrawal.
6. Remove safety pins.
 - a. Remove locking safety pin, then,
 - b. Remove interlocking safety pin, located between the prongs, from the positive safety pin.
7. Camouflage the mine.
 - a. Complete covering the mine with dirt until only the pressure prongs are above ground level.
 - b. Cover the installation with leaves, twigs, or other brush so it is not detectable.
8. Arm mine.
 - Remove the positive safety pin.

NOTE: If pin is hard to remove, obtain a new fuze.

B. Install the mine with tripwires.

1. Follow steps (1) through (5) above.
2. Attach tripwire(s).
 - a. Install two anchor stakes about 10 meters from the mine. Space stakes so that the wires, when attached, will form a wide V.
 - b. Fasten a separate wire to each anchor stake.
 - c. Fasten the free ends of the wires to the release pin ring of the fuze.

WARNING: DO NOT INSTALL TRIPWIRES SO TIGHT THAT THEY PULL THE RELEASE PIN RING BECAUSE THIS MIGHT CAUSE THE MINE TO DETONATE ACCIDENTALLY WHEN SAFETY PINS ARE REMOVED.

- d. Leave enough slack in the tripwires to allow the top of the fuze to rotate and receive a direct pull on the release pin ring from either of the tripwires.
3. Follow steps (6) through (8) above.

C. Recover the mine.

WARNING: BEFORE ATTEMPTING TO REMOVE THE MINE, CHECK THE MINE AND THE AREA AROUND IT TO BE SURE IT HAS NOT BEEN TAMPERED WITH OR BOOBYTRAPPED!

1. Disarm mine without tripwires.
 - a. Carefully uncover top of the mine.
 - b. Insert the positive safety pin through the positive safety pin hole.
 - c. Insert the locking safety pin through the locking safety pin hole opposite the release-pin ring.
 - d. Carefully dig around the sides and bottom of the mine, always being alert for boobytraps.
 - e. Carefully lift the mine from the hole.
 - f. Unscrew and remove the fuze assembly using the fuze wrench.
 - g. Replace the plastic shipping plug in the fuze well.
 - h. Replace the mine and fuze in the packing box.
2. Disarm mine with tripwires.
 - a. Follow steps (a) through (c) above.
 - b. After the safety pins have been reinserted, cut all slack wires attached to the release pin ring.
 - c. Follow steps (d) through (h) above.

RESOURCES:

FM 7-11B1, Soldier's Manual, Skill Level 1

FM 20-32, Mine/Countermine Operations at the Company Level

FM 21-75, Combat Skills of the Soldier

TASK: INSTALL AND RECOVER M21 ANTITANK MINE (G-0300-9.4/PVT)

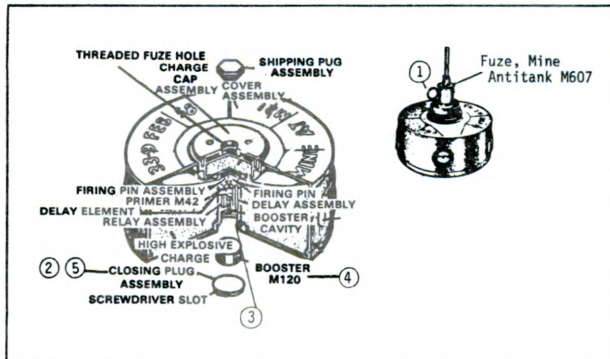
CONDITIONS: Conditions are determined by mission requirements. You will be provided: an M21 AT mine (inert), M607 fuze (inert), M120 booster (inert), extension rod, and M26 arming wrench. You will provide an entrenching tool and/or bayonet.

STANDARD: The mine will be installed and recovered by prescribed training steps. The camouflaged mine or extension rod must not be detectable by the casual observer.

BATTLE DRILL(S): 20

PERFORMANCE STEPS:**A. Install the mine.**

1. Emplace and arm mine for tilt rod operation.
 - a. Remove the mine and its components from the packing box and inspect all parts for serviceability.
 - (1) Check for cracks, dents, or other signs of damage.
 - (2) Replace damaged parts, if any.
 - b. Insert the M120 booster.
 - (1) Check to ensure that the cotter pins of the fuze pull ring assembly and the fuze closure assembly are securely in place.
 - (2) Turn the mine bottom up and, with the screwdriver end of the M26 wrench, remove the closing plug assembly by turning it counterclockwise.
 - (3) Inspect the booster cavity for foreign matter and remove any if found.
 - (4) Insert the M120 booster (with the washer side toward the fuze) into the booster cavity.
 - (5) Replace the closing plug, using the M26 wrench to turn the plug clockwise until tight.
- Ensure that the gasket of the closing plug assembly is against the booster, then, turn the mine bottom down.

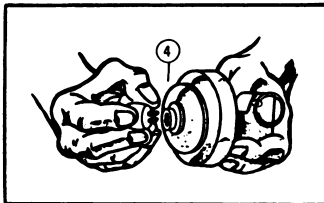
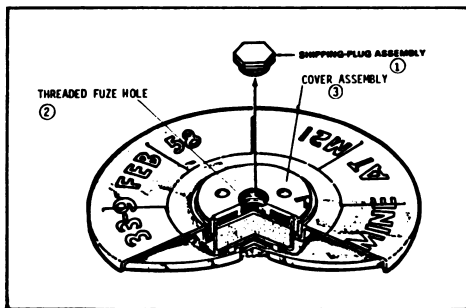


c. Install M607 fuze into fuze hole.

- (1) Using the wrench, remove the shipping plug assembly from the fuze hole.
- (2) Inspect the fuze hole. Remove any foreign matter.
- (3) Remove the closure assembly from the fuze, using the closure end of the wrench.

NOTE: The gasket on the bottom of the fuze should stay in place.

- (4) Screw the fuze hand-tight into the threaded fuze hole of the mine charge cap.



d. Emplace mine in ground.

- (1) Dig a hole 10 to 12 inches in diameter and 6 inches deep.
- (2) Check the bottom of the hole to make sure that the ground is solid and has a firm, flat foundation for the mine to rest on.

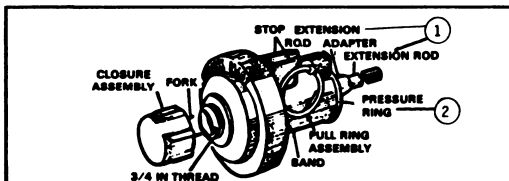
NOTE: For SOFT GROUND, place a board or other flat object under the mine to form a firm foundation.

- (3) Place the mine in the hole and press the dirt firmly around the mine up to the level of the top of the fuze body.

CAUTION: Take care not to cover the fuze.

e. Insert extension rod into fuze.

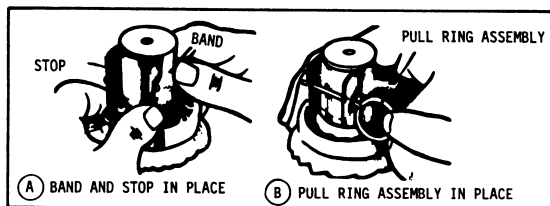
- (1) Screw the extension rod into the extension rod adapter.
- (2) Screw the rod and adapter assembly into the pressure ring of the fuze and hand tighten.
- (3) Ensure that the extension rod is vertical and not tilted in any direction.



f. Arm the mine.

WARNING: Do not arm the mine until just before camouflaging. After arming, be careful not to tilt the extension rod or the pressure ring as the fuze may be initiated by a minimum force of 3.75 pounds on the end of the extension rod or a minimum tilt force of 45 pounds on the side of the pressure ring.

- (1) Remove the pull ring assembly, the band, and the stop. (Retain these items for future use).



- (2) Remove dirt from around the plastic.

g. Camouflage the mine.

- (1) Place camouflage materials around the extension rod in such a way as not to prevent the rod from being tilted or the fuze from functioning.
- (2) Cover and camouflage the mine and fuze.

NOTE: Avoid use of the extension rod in open areas where it might be detected.

2. Emplace and arm mine for pressure operation.

a. Follow steps a. through d. above.

b. Arm the mine.

NOTE: If the mine is being set for pressure detonation with the pressure rings, do not use the extension rod. Do the following instead:

- (1) Remove the pull ring assembly band and stop on the fuze. **THIS ARMS THE MINE.**
- (2) Keep the above items for future use if necessary to disarm the mine.
- (3) Camouflage the mine using soil from the hole to cover the top of the mine with a 5-centimeter 2-inch mound. Remove excess soil and add natural vegetation to complete camouflaging of mine.

B. Recover the mine.

1. Disarm and remove mine with tilt rod.

WARNING: If, during disarming, it is noted that the extension rod appears deformed or tilted, keep personnel away from the mine and notify an explosive disposal officer immediately.

- a. Carefully inspect the mine for boobytrapping devices before attempting to uncover the mine.
 - b. Remove the camouflage material, taking care not to disturb the extension rod.
 - c. Disarm the fuze.
 - (1) Reassemble the band, stop, and pull-ring assembly.
 - (2) Reinsert the cotter pin and spread the ends so that the cotter pin is not easily removable.
 - d. Remove the dirt from around the mine and remove the mine from the hole.
 - e. Remove the extension rod and extension rod adapter. Be careful not to damage them.
 - f. Unscrew the fuze from the mine and install the closure assembly on the fuze.
 - g. Replace and secure the shipping plug assembly into the fuze hole.
 - h. Unscrew the closing plug assembly from the bottom of the mine.
 - i. Remove the booster, then,
 - j. Reinstall the closing-plug assembly with the gasket toward the booster cavity.
 - k. Place the mine, fuze, and components in their original containers.
2. Disarm and remove mine set for pressure detonation:
- Follow all of the above steps, skipping step d.

NOTE: There is no extension rod when the mine is set for pressure operation.

RESOURCES:

FM 21-75, Combat Skills of the Soldier
FM 7-11B1, Soldier's Manual, Skill Level 1
MCI Course 03.4m, Landmine Warfare and Demolitions
MCI Course 03.72, The Marine Rifleman: Weapons

TASK: REPAIR FIELD WIRE (G-0300-10.3/PFC)

CONDITIONS: Conditions will be determined by mission requirements. You will be provided: a cut or shorted field wire, knife and electrical tape.

STANDARD: You must be able to talk to a person on the other end of the repaired line and must receive a ring back.

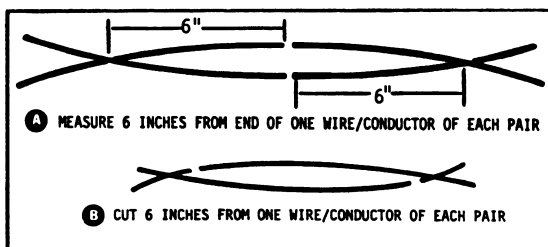
BATTLE DRILL(S): 1, 28

PERFORMANCE STEPS:**A. Repair cut field wire/conductor.**

1. Locate the section of wire that contains the cut.

NOTE: Conductor is wire and/or other material that allows for the flow of electricity.

- Search the entire length of wire by looking for cracks and breaks in the insulation.
 - Look for damaged section(s) where strands of copper might be bent, broken or seen protruding from the insulation.
2. Prepare ends of cut wires/conductors for splicing (SPlicing, see figure II on next page).
 3. Cut conductors to stagger their lengths about 6 inches.

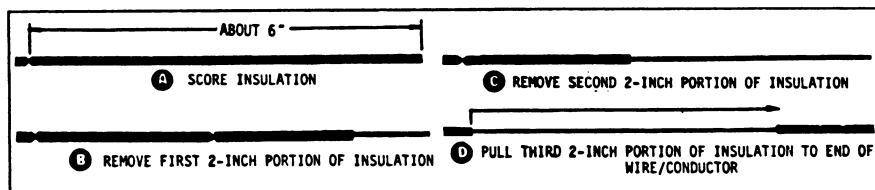


Wire/Conductor staggered for splicing

4. Remove the insulation from each of the wires/conductors.

NOTE: Remove any foreign matter, such as enamel, by carefully scraping the wire with the back of knife blade or other suitable tool(s).

The wire(s)/conductor(s) should not be nicked, cut or weakened when the wires are scraped. Multiple strand wires should be twisted lightly after scraping.



Removing insulation from field wire/conductor

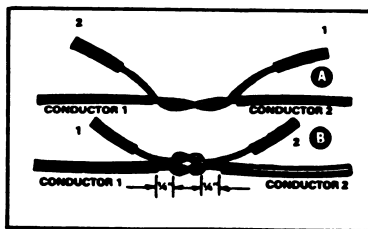
5. Reconnect each conductor by square knot.
6. Select the long conductor of one pair of wires and the short conductor of the other pair and tie a square knot.
7. Reconnect the twist to the line by wrapping the two remaining conductors around the two already tied.
8. Tie the second square knot.
9. Remove the sections of the insulation from the tips of the conductors.
10. Untwist the strands and flex them.
11. Separate the steel strands from the copper strands.

NOTE: Copper strands stay bent when flexed.

12. Cut the steel strands flush to the ends of the insulation.
13. Cross the left-hand end of the copper strands over the crest of the square knot.
14. Wrap several tight turns over the bare part of the right-hand conductor.
15. Continue wrapping until you have made two turns onto the insulation.
16. Cut the extra wire from the ends of the copper strands.
17. Repeat steps 13 through 16 for the right-hand end of the copper strands.
18. Tape the splice.

- Start taping at the center of the splice.
- Use steady pull and wrap the tape about 1 1/2 inches on the insulation at one end.
- Work the tape back over the knot (past the place you started) to cover about 1 1/2 inches onto the insulation on the opposite side.
- Work the tape back again to the center of the splice.

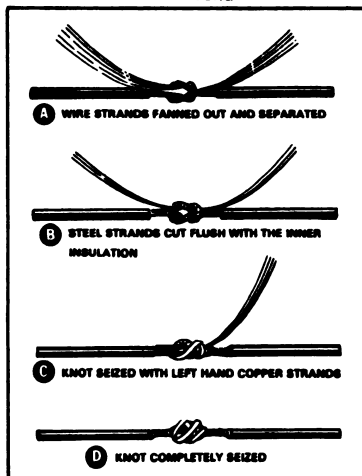
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Tying square knot in field wire

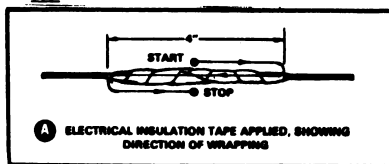
II

SPLICING



Seizing square knot

III



Applying electrical tape

B. Repair shorted field wire.

1. Locate the section of the wire that contains the short.
2. Find the short.
3. Cut out the entire damaged section.
4. Prepare ends of conductors for splicing.
 - Follow steps 3 through 18 (REPAIR CUT FIELD WIRE).

RESOURCES:

FM 24-20, Field Wire and Field Cable Techniques
FM 7-11B1, Soldier's Manual-Infantryman
MCI Course 25.51, Field Wire Techniques

TASK: OPERATE RADIO SET IN SECURE VOICE MODE (G-0300-10.6)

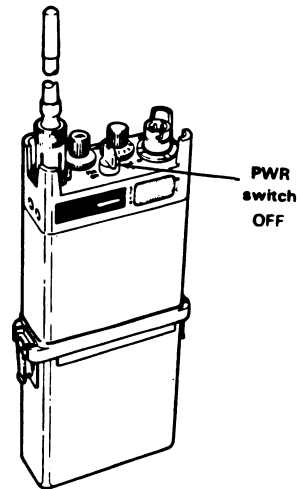
CONDITIONS: Conditions are determined by mission requirements. You will be provided: AN/PRC 68 radio and battery, TSEC/KYV-2 secure voice module, and a KYK-13.

STANDARD: Within 5 minutes, you will assemble the radio and secure voice module and make a communications check with another station.

BATTLE DRILL(S): 1

PERFORMANCE STEPS:

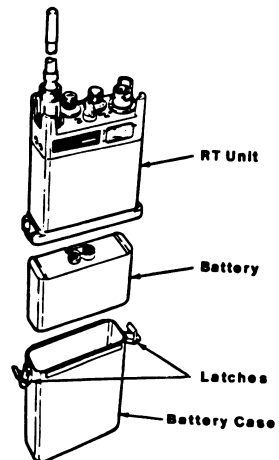
NOTE: Before you remove the battery from the radio ensure that the PWR switch is set to OFF.



A. Remove battery from radio.

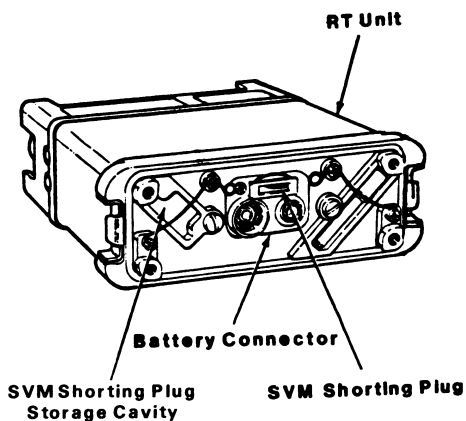
Release the two latches on the battery case and slide the case off.

- Unplug the battery from the radio set AN/PRC-68A.

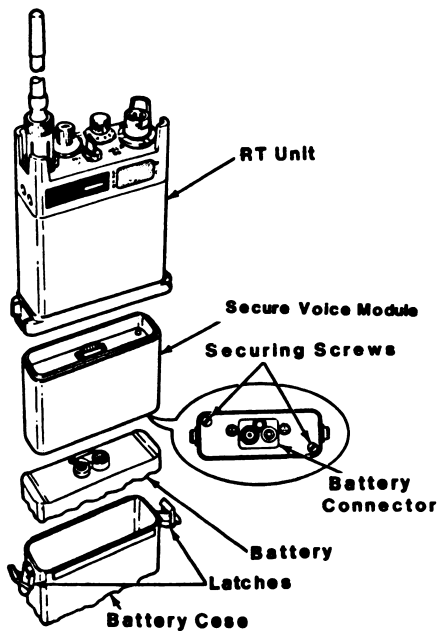


B. Attach secure voice module to radio.

1. Unplug secure voice module (SVM) shorting plug and store in storage cavity.



2. Install the SVM and secure the RT unit by tightening the two securing screws.



C. Attach battery to secure voice module.

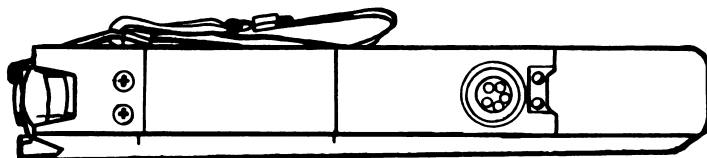
-Install the battery and battery case, and secure them with latches. (See preceding illustration.)

D. Set the PWR switch to ON.

E. Load crypto variable from KYK-13 into secure voice module.

NOTE: For security purposes, this performance step and ALL remaining steps and operation require the operator to have the appropriate security clearance.

CAUTION
A KEYED KYK-13 IS CLASSIFIED.



To load from a KYK-13:

1. Connect it to the KYV-2.

-Insert the KYK-13 male fill connector into the KYV-2 female fill connector, and rotate it clockwise.

2. Turn mode switch ON.

3. Turn switch to appropriate number.

4. Press and release handset/push-to-talk button on the equipment or device being loaded, as required.

NOTE: A red light will flash on the KYK-13 if the coded fill is transferred to the KYV-2 as the push-to-talk button is depressed.

5. Turn mode switch to OFF/CHECK.

F. Make a radio check with another station.

Sample:

A4W this is Y7C Radio Check	over
Y7C this is A4W Roger	over
This is Y7C Roger	over

RESOURCES:

Marine Corps TM 06827B-10/1, Operator's Manual, Radio Set AN/PCR-68A
Marine Corps Institute Course 25.20b, Communications for the FMF Marine

TASK: SEND RADIO MESSAGE (G-0300-10.7/PFC)

CONDITIONS: Conditions will be determined by mission requirements. You will be provided: a radio, a frequency, call sign of receiving station and a message to be sent.

STANDARD: You will send a message without error, following correct radio procedures.

BATTLE DRILL(S): 1**PERFORMANCE STEPS:****A. Turn radio on.**

- Locate on/off switch and turn on.

B. Listen to determine if net is clear.

- Ensure no unfamiliar sounds are on net.

C. Contact distant station.

1. Use correct phonetic alphabet and numeral pronunciation.

The Phonetic Alphabet

When talking over the radio, certain words in the conversation may be misunderstood because of similarity in sound to other words. In order to eliminate any misunderstanding by the receiving party, the sender uses the phonetic alphabet to spell out words that might be misunderstood.

<i>Phonetic Alphabet</i>			
Letter	Equivalent Phonetic	Letter	Equivalent Phonetic
A	Alfa	N	November
B	Bravo	O	Oscar
C	Charlie	P	Papa
D	Delta	Q	Quebec
E	Echo	R	Romeo
F	Foxtrot	S	Sierra
G	Golf	T	Tango
H	Hotel	U	Uniform
I	India	V	Victor
J	Juliett	W	Whiskey
K	Kilo	X	X-ray
L	Lima	Y	Yankee
M	Mike	Z	Zulu

Numeral Pronunciation

Numbers are important in military messages and should be spoken clearly in telephones and radio conversations. The pronunciation of numerals should be exaggerated to avoid misunderstanding by the receiving party. Each digit of large numbers is pronounced separately except in the case of even "hundreds" and "thousands."

1-wun	6-six
2-too	7-seven
3-tree	8-ate
4-fo-wer	9-niner
5-fife	0-zero
70-seven zero	
84-ate fo-wer	
131-wun tree wun	
500-fife hun-dred	
1,468-wun fo-wer six ate	
7,000-seven thou-sand	
16,000-wun six thou-sand	

2. Call distant station (call sign F3D)

EXAMPLE: YOU SAY
Q7Z (your call sign) transmits:

3. Say that you have immediate message for station.

FOX TROT TREE DELL TAH - THIS
IS KEH BECK SEV EN ZOO LOO -
(IMMEDIATE) OVER

F3D transmits:

KEH BECK SEV EN ZOO LOO - THIS
IS FOX TROT TREE DEL TAH -
(SEND YOUR IMMEDIATE) OVER

D. Send message.

1. Transmit message using radio procedures.

FOX TROT TREE DELL TAH - THIS
IS KEH BECK SEV EN ZOO LOO

2. Follow these security considerations:

- Use authentication to ensure other communication station is a friendly one.

IMMEDIATE

- Use only approved codes.

TIME ZE RO WUN ZE RO TOO ZE RO

- Designate periods when all radios are turned off.

FIFE ZOO LOO JULY AIT FIFE

- Restrict the use of radio transmitters and monitoring radio receivers.

FROM KEH BECK SEV EN FOX TROT

TO FOX TROT TREE DELL TAH

BREAK UNCLASSIFIED SPOT
REPORT

- Operate radio(s) on low power.

SEVEN MEN IN CIVILIAN CLOTHES
WUN CARRYING RIFLE AND
BANDOLEER SIX CARRYING FARM
TOOLS ENTERED THE VILLAGE OF
HAMHEIM
COORDINATES BRAH VOH NO VEM
BER TOO TOO TREE TOO TOO SEV
EN AT ZE RO WUN TREE FIFE ZOO
LOO JULY AIT FIFE

BREAK OVER

E. Obtain receipt.

Get a receipt for message sent.

F3D transmits YOU SAY:

KEH BECK SEV EN ZOO LOO - THIS
IS FOX TROT TREE DELL TAH

ROGER

OUT

NOTE: Prowords and their explanations are referenced on the following pages.

RESOURCES:

FM 24-18, Field Radio Techniques

FM 21-75, Combat Skills of the Soldier

FM 21-2, Soldier's Manual of Common Tasks

Guidebook for Marines, 14th Revised Edition, 1981

PROWORDS AND THEIR EXPLANATIONS

PROWORDS

EXPLANATION

ALL AFTER.....	The part of the message to which I refer is all of that which follows.
ALL BEFORE.....	The part of the message to which I refer is all of that which precedes.
AUTHENTICATE	The station called is to reply to the challenge which follows.
AUTHENTICATION IS	The transmission authentication of this message is
BREAK	I hereby indicate the separation of the text from other parts of the message.
CORRECT.....	You are correct, or what you have transmitted is corrected.
ROUTINE.....	Routine precedence is reserved for all official communications that do not require flash, immediate, or priority precedence.
SAY AGAIN	Repeat your last transmission or the part indicated.

SILENCE.....	Cease transmissions on the net immediately.
(Repeated three or more times.)	Silence will be maintained until lifted. (When an authentication system is in force, the transmission imposing silence is to be authenticated.)
SILENCE LIFTED	Silence is lifted. (When an authentication system is in force, the transmission lifting silence is to be authenticated.)
SPEAK SLOWER.....	You are transmitting too fast. Slow down.
THIS IS	This transmission is from the station whose designation immediately follows.
TIME	That which immediately follows is the time or date-time group of the message.
TO	The addressees immediately following are addressed for action.
UNKNOWN STATION	The identity of the station with whom I am attempting to communicate is unknown.
WAIT.....	I must pause for a few seconds.
WAIT-OUT	I must pause longer than a few seconds.
WILCO	I have received your signal, understand it, and will comply. To be used only by the addressee. As the meaning of ROGER is included in that of WILCO, the two prowords are never used together.
CORRECTION.....	An error has been made in this transmission. Transmission will continue with the last word correctly transmitted. An error has been made in this transmission (or message indicated). The correct version is _____. That which follows is a corrected version in answer to your request for verification.
FLASH	Flash precedence is reserved for alerts, warnings, or other emergency actions having immediate bearing on national, command, or area security (e.g., presidential use; announcement of an alert; opening of hostilities; land, air, or sea catastrophes; intelligence reports on matters leading to enemy attack; potential or actual nuclear accident or incident; implementation of services unilateral emergency action procedures).
FROM.....	The originator of this message is indicated by the address designator immediately following.
GROUPS	This message contains the number of groups indicated by the numeral following.
I AUTHENTICATE	The group that follows is the reply to your challenge to authenticate.

IMMEDIATE	Immediate precedence is reserved for vital communications that (1) have an immediate operational effect on tactical operations, (2) directly concern safety or rescue operations, (3) affect the intelligence community operational role (e.g., initial vital reports of damage due to enemy action; land, sea, or air reports that must be completed from vehicles in motion such as operational mission aircraft; intelligence reports on vital actions in progress; natural disaster or widespread damage; emergency weather reports having an immediate bearing on mission in progress; emergency use for circuit restoration; use by tactical command posts for passing immediate operational traffic).
I READ BACK	The following is my response to your instructions to read back.
I SAY AGAIN	I am repeating transmission or part indicated.
I SPELL	I shall spell the next word phonetically.
MESSAGE	A message which requires recording is about to follow. Transmitted immediately after the call. (This proword is not used on nets primarily employed for conveying messages. It is intended for use when messages are passed on tactical or reporting nets.)
MORE TO FOLLOW	Transmitting station has additional traffic for the receiving station.
OUT	This is the end of transmission to you and no answer is required.
OVER	This is the end of my transmission to you and a response is necessary. Go ahead: transmit.
PRIORITY	Priority precedence is reserved for calls that require prompt completion for national defense and security, the successful conduct of war, or to safeguard life or property, and do not require higher precedence (e.g., reports of priority land, sea, or air movement; administrative, intelligence, operational or logistic activity calls requiring priority action; calls that would have serious impact on military, administrative, intelligence, operational, or logistic activities if handled as a ROUTINE call). Normally, PRIORITY will be the highest precedence that may be assigned to administrative matters for which speed of handling is of paramount importance.
RADIO CHECK	What is my signal strength and readability.
READ BACK	In other words, how do you read (hear) me ?
RELAY (TO)	Repeat this entire transmission back to me exactly as received.
RELAY (TO)	Transmit this message to all addressees immediately following this proword.
ROGER	I have received your last transmission satisfactorily, and loud and clear.

TASK: AUTHENTICATE, ENCODE, AND DECODE MESSAGES (G-0300-10.8/PFC)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a command CEOI, AKAC-874, KAL-61B, pencil and paper as required.

STANDARD: You must authenticate required transmission and encode/decode numbers and letters.

BATTLE DRILL(S): 1

PERFORMANCE STEPS:

A. Authenticate according to instructions printed in command CEOI and AKAC-874.

Find a challenge and reply for authentication. Practice by using the steps that follow.

NOTE: AKAC-874 numerical cipher (symbols) change every six (6) hours. Ensure you are using the correct page and numerical cipher (symbols).

1. Select any two letters (except Z) at random.

EXAMPLE: "CH"

2. Find the first letter of the challenge "C" in the line indicator column.
3. Read to the right on that same line to find the second letter "H".
4. Look at the letter directly under the "H", read the letter "L".
5. Reply: "L"; this is the correct challenge.

	ABC 0	DEF 1	GHJ 2
LINE INDICATOR COLUMN	A IMKY	QOC	PAU
FIRST LETTER IN CHALLENGE	B MYNJ	RDH	OBA
	C SWLN	VJM	HB
SECOND LETTER IN CHALLENGE	D SJYM	GFP	LT
	E WANY	CUR	KMQ
REPLY	F VKLY	BQA	FEX

PROTECTIVE MARKING

SET S1 PERIOD S1

KT

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2

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100

X PXVN

Y MTXO

KLS

JGD

WCD

FPH

NOTE: For challenge "YJ", the reply is "Q".

- If using the last line, "Y", go to the top of the sheet in the same column to find the reply.

NOTE: The letter "Q" is found under the "J" in the challenge "YJ".

B. Encode and decode messages according to instructions printed in command CEOI and AKAC-874.

Follow the outlined steps for transmitting messages.

NOTE: Rules to Remember:

- Never encrypt more than 15 digits on one set line.
- Never encrypt numbers and then say in the clear what they mean.
- Add zeros in front of numbers from time to time to confuse the enemy.

1. Select a SET INDICATOR.

- It must consist of two letters selected randomly.

NOTE: Do not select "Z". The two letters identify the actual line to be used to encrypt numbers.

EXAMPLE: "VS"

Set Line Indicator Column		FOR INSTRUCTIONAL PURPOSES ONLY															
V	ABC 0	DEF 1	GHI 2	JKL 3	MNO 4	PQR 5	STU 6	UVW 7	XYZ 8	012 9	345 A	678 B	901 C	234 D	567 E	890 F	123 G
A	FGHI 0	JKLM 1	MNOP 2	QRST 3	TUVW 4	XYZA 5	BCDE 6	EFGH 7	IJKL 8	MNOP 9	QRST A	TUVW B	XYZA C	BCDE D	EFGH E	IJKL F	MNOP G
B	EFGH 0	IJKL 1	MNOP 2	QRST 3	TUVW 4	XYZA 5	BCDE 6	EFGH 7	IJKL 8	MNOP 9	QRST A	TUVW B	XYZA C	BCDE D	EFGH E	IJKL F	MNOP G
C	GHIJ 0	KLMN 1	OPQR 2	STUV 3	WXYZ 4	ABCD 5	EFGH 6	IJKL 7	MNOP 8	QRST 9	TUVW A	XYZA B	BCDE C	EFGH D	IJKL E	MNOP F	QRST G
D	CHNO 0	DOOR 1	DOOR 2	DOOR 3	DOOR 4	DOOR 5	DOOR 6	DOOR 7	DOOR 8	DOOR 9	DOOR A	DOOR B	DOOR C	DOOR D	DOOR E	DOOR F	DOOR G
ATTN: ABC DEF GHI JKL MNO PQR STU UVW XYZ 0 1 2 3 4 5 6 7 8 9 U VWXY ABC DEF GH IJ KLM NO PQ RS TU V WXYZ UAB CDE FG HI JKL MN OP QR ST W UVWX YTA BCD EF GH IJK LM NO PQ RS X TUVW XYS ABC DE FG HIJ KL MN OP QR Y STUV WXY RAB CD EF GHI JK LM NO PQ 1800-2359 Z DAY 21 SAMPLE AKAC-874 FOR NUMERAL ENCRYPTION AND CHALLENGE AND REPLY AUTHENTICATION																	

2. Say: "I set (pause) Victor Sierra".

3. Go to line "V" in the SET LINE INDICATOR column.

- Move horizontally to the right and locate "S".
- Look at the next letter to the right, "T".

EXAMPLE: See Line "V"

0	1	2	3	4	5	6	7	8	9
VWXY	UAB	CDE	FG	HI	JKL	MN	OP	QR	ST

NOTE: If the 2nd letter in SET LINE INDICATOR is the last in that line, go back to the beginning of line and use first letter.

4. Go to the "T" line and use this line to encode numbers; this is also known as the SET LINE.

EXAMPLE: See Line "T"

0	1	2	3	4	5	6	7	8	9
XYWA	BCD	EFG	HI	JK	LMN	OP	QR	ST	UV

5. Say: "COUPLE..."

NOTE: Couple is used to indicate exactly which letters are to be decoded into numbers. The written symbol is: (

6. Transmit message that indicates your location/position.

EXAMPLE: Say:

Bravo., Foxtrot., India., Hotel.,
Gulf., Charlie...

ENCRYPTION: B F I H G C

7. Say: "UNCOUPLE..."

NOTE: Uncouple is used to indicate transmission of message is complete. The written symbol is:)

8. Locate each letter in the ENCRYPTION.

NOTE: See the numbers at the top of each column on p. 2 of 3, B., 1.

9. Record the number(s) for each of the above letters in the ENCRYPTION.

EXAMPLE: Line "T":

NOTE: You may select any one of the three letters in the group under the appropriate number on the SET LINE.

¹BCD ²EFG ³HI ³HI ²EFG ¹BCD

NOTE: The complete transmission should read as follows:

"I set... Victor Sierra, Couple...Bravo... , Foxtrot..., India...,
Hotel..., Gulf..., Charlie..., Uncouple".

RESOURCES:

FM 7-11B1 Soldier's Manual, Infantryman Skill Level 1
MCI Course 25.25a, Communications Security

TASK: CONSTRUCT FIELD EXPEDIENT ANTENNA FOR FM RADIO (G-0300-10.9/PFC)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: FM radio, knife, suspension line, antenna wire, measuring device, call signs, VHF frequency, and a radio station within range.

STANDARD: You must be able to communicate with designated station.

BATTLE DRILL(S): 1

PERFORMANCE STEPS:

A. Cut antenna wire to required length.

1. Determine the length of the antenna you need by using the formulas to the right or the Quick Reference chart on p. 3 of 3.
2. Cut the antenna wire to the required length.

NOTE: - Wire length will depend on the operating frequency and the size of the available site.
- Each leg of the antenna should be at least one wavelength long.

FORMULAS

□ To figure a quarter-wavelength antenna in feet:
Divide 234 (constant) by your operating frequency in MHz.
example: $234 \div 44.8 = 5.22$ or 5'2"

□ To figure a half-wavelength antenna in feet:
Divide 468 (constant) by your operating frequency in MHz.
example: $468 \div 56 = 8.36$ or 8'5"

□ To figure a full-wavelength antenna in feet:
Divide 936 (constant) by your operating frequency in MHz.
example: $936 \div 45 = 20.8$ or 20'10"

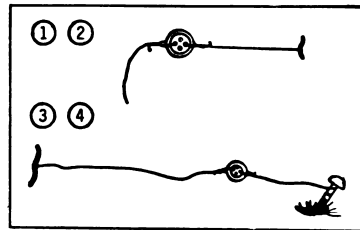
□ To convert feet to meters, multiply by .3048 (constant).
example: $110 \text{ feet} \times .3048 = 33.5 \text{ meters}$

□ To convert meters to feet multiply by 3.28 (constant).
example: $100 \text{ meters} \times 3.28 = 328 \text{ feet}$

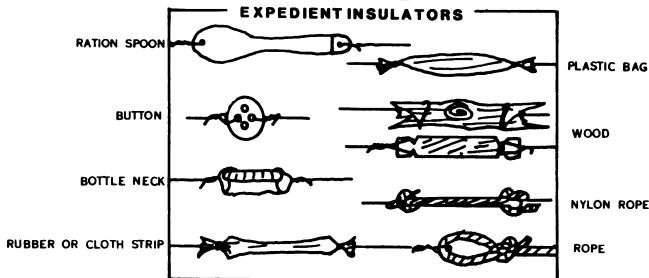
EXAMPLE: At 30MHz frequency the leg wavelength is 1 1/2 wavelength and at 70 MHz it is 3 1/2 wavelengths.

B. Attach a field expedient insulator to one end of the wire.

1. Select an appropriate expedient insulator.
2. Connect wire to each end of the insulator.
3. Tie one end of the antenna wire to metal stake and—
4. Embed the stake into the ground.



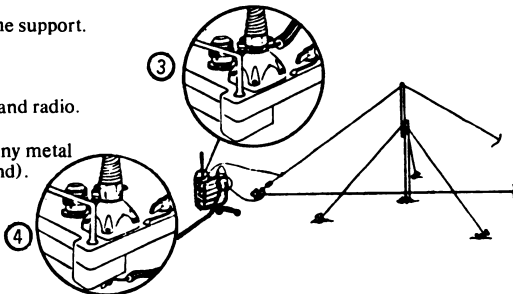
NOTE: - The following are examples of EXPEDIENT INSULATORS and FIELD EXPEDIENT items:



BEST: PLASTIC OR GLASS GOOD: DRY WOOD FAIR: DRY CLOTH, DRY ROPE

C. Attach the other end of the wire to the antenna connector on the radio.

1. Connect antenna wire on or over the support.
2. Raise antenna.
3. Attach an antenna lead to antenna and radio.
4. Connect the ground plane wire to any metal part of radio (this will act as a ground).

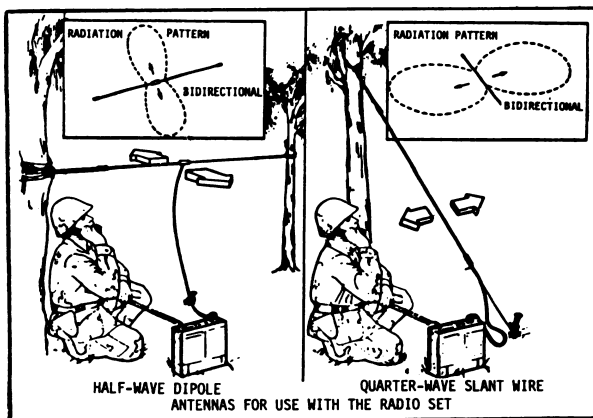


D. Tie suspension line to the insulator and throw the line over a tree limb or pole and pull antenna up.

1. Pull wire until it is vertical.

CAUTION: Use a stake and insulator to keep the antenna wire from pulling out of the antenna connector on the radio.

2. Look at the examples provided to assist you in setting up field expedient antennas.



E. Communicate using the field expedient antenna.

1. Follow established communication procedures for FM radio.
2. Use security considerations presented in G-0300-10.7.

RESOURCES:

FM 24-18, Field Radio Techniques
 OH 10-3, Radio Operator's Handbook
 MCI Course 25.30f, VHF (FM) Field Radio Equipment
 MCI Course 25.15g, Antenna Construction and Propagation of Radio Waves

QUICK REFERENCE CHARTS

1. Table of Lengths

The following table gives the length in feet for half-wave antennas that are end-fed or center-fed. It is calculated in steps of one megacycle from 1 MC to 76 MC. The formulas given in step A, 1. may be used for frequencies that are not whole numbers.

Column A = Frequency (MC) = MHz

Column B = End-fed antenna (ft.) (1/2)

Column C = Center-fed antenna—for each side of insulator (1/4)

A MHz	B (1/2)	C (1/4)	A MHz	B (1/2)	C (1/4)
1	468	234	41	11.4	5.7
2	234	117	42	11.1	5.5
3	156	78	43	10.9	5.4
4	117	58.5	44	10.6	5.3
5	93.6	46.8	45	10.4	5.2
6	78	39	46	10.2	5.1
7	66.8	33.4	47	9.9	5
8	58.5	29.2	48	9.7	4.8
9	52	26	49	9.5	4.7
10	46.8	23.4	50	9.4	4.7
11	42.5	21.2	51	9.2	4.6
12	39	19.5	52	9	4.5
13	36	18	53	8.8	4.4
14	33.4	16.7	54	8.7	4.3
15	31.2	15.6	55	8.5	4.2
16	29.2	14.6	56	8.4	4.2
17	27.5	13.7	57	8.2	4.1
18	26	13	58	8.1	4
19	24.6	12.3	59	7.9	3.9
20	23.4	11.7	60	7.8	3.9
21	22.3	11.2	61	7.7	3.8
22	21.3	10.6	62	7.5	3.7
23	20.3	10.1	63	7.4	3.7
24	19.5	9.7	64	7.3	3.6
25	18.7	9.3	65	7.2	3.6
26	18	9	66	7.0	3.5
27	17.3	8.6	67	6.9	3.4
28	16.7	8.3	68	6.8	3.4
29	16.1	8	69	6.7	3.3
30	15.6	7.8	70	6.6	3.3
31	15.1	7.5	71	6.5	3.2
32	14.6	7.3	72	6.5	3.2
33	14.2	7.1	73	6.4	3.2
34	13.8	6.9	74	6.3	3.1
35	13.4	6.7	75	6.2	3.1
36	13	6.5	76	6.1	3.0
37	12.6	6.3			
38	12.3	6.1			
39	12	6			
40	11.7	5.8			

TASK: NAVIGATE USING COMPASS (G-0300-11.1/CPL)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a lensatic compass, a starting point and an objective.

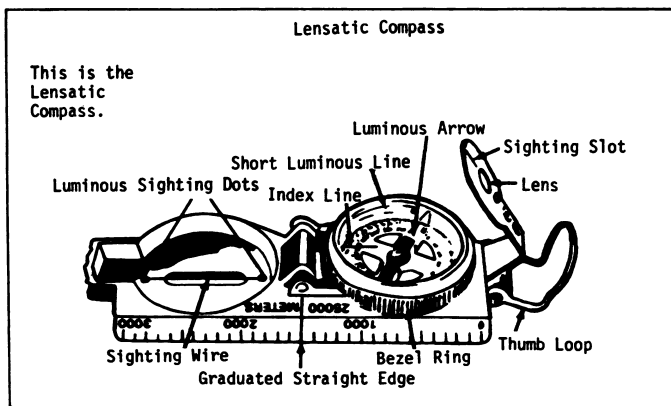
STANDARD: You will navigate to a given objective.

BATTLE DRILL(S): 2

PERFORMANCE STEPS:

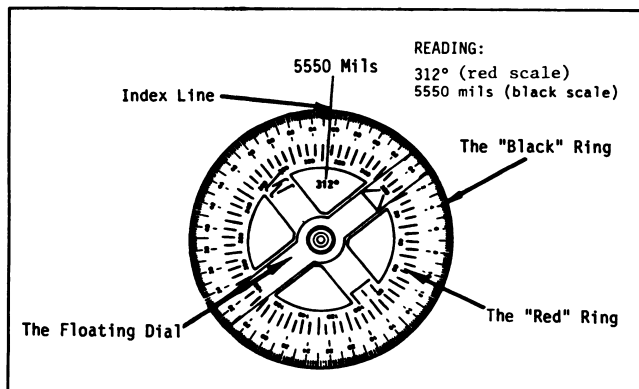
A. Determine magnetic azimuth.

NOTE: Review lensatic compass to become familiar with its parts, if necessary.



1. Set the compass at zero.

- Rotate bezel ring until the azimuth is directly under the black index line, see illustration below.



- Turn the bezel ring until the luminous line is directly over the North arrow.
The compass is now set.

2. Navigate to selected object.

- Hold the compass still using the centerhold position. The dial should remain stationary.

NOTE: The compass-to-check position may also be used, see EYE VIEW.

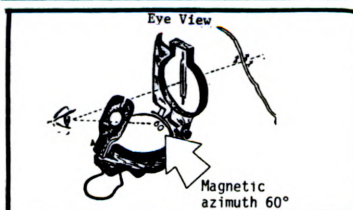
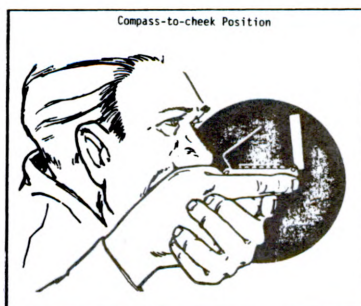
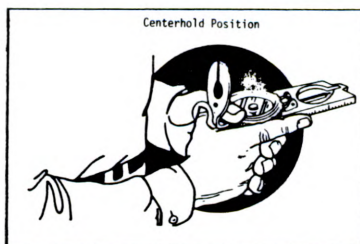
- Remove helmet when using this method.

- To read direction, point the compass in the direction you want to go or in the direction you want to determine.
- Look under the index line on the outer glass cover and estimate to the nearest degree or 10 mils the position of the hairline over the red/black scale.
- Read the value in degrees under the black index line of the compass.
- Rotate entire body until luminous line is directly over the North arrow.

- Select the best steering mark that is directly in line with gaze.

NOTE: This steering mark will be on azimuth line of march.

- Verify azimuth.
- Look again down to the face of compass and ensure that you are gazing in the proper direction.
- Read only the inner (degree) circle when determining azimuth.



B. Set azimuth at night.

INFORMATION:

- Around base of the bezel ring is a series of 120 notches.
- A tiny bezel detent spring is seated in one of the notches.
- When turning, it clicks; each click equals a 3-degree change in direction.
- The clicking action, used with the luminous markings, provide a means of following an azimuth at night.

1. Set the compass at 0°.
2. Hold bezel ring with left hand and rotate the body of the compass clockwise with right hand.
3. Turn to get the number of clicks required.

CALCULATING REQUIRED CLICKS:

IF	DIVIDE by	REQUIRED CLICKS
97°	3	32
99°	3	33
110°	3	36

NOTE: 97° ÷ 3 = 32 1/3, drop the 1/3.
110° ÷ 3 = 36 2/3, drop the 2/3.

C. Follow an azimuth.

1. To follow the desired azimuth, rotate entire body until luminous line is over the North arrow.
2. Point the compass cover directly at the object.
3. Follow the line indicated by the two luminous sighting dots on the compass cover (not the North arrow).
4. Look down into compass and read the azimuth under the fixed black index line.
 - Hold the compass *level* and *firm* when sighting on an object and reading an azimuth.

D. Pace distance.

1. Mark off a "100-meter pacing course" with visible indicators.
2. If necessary, designate a longer course of not less than 600-meters in length for additional practice.
3. Practice on designated course(s) by keeping a count of your paces from start to finish.
 - Continue to practice on courses with varying types of terrain.

- Make note and record *your own* pace count(s).

4. After the length of the course has been walked, *divide* the total number of paces by the number of 100-meters on the course.

NOTE: The following conditions may affect your pace count: slopes, winds, surfaces, weather elements, stamina, excess weight of clothing/equipment.

EXAMPLE: The following example is of a man who uses 116 paces to travel 100 meters.

<u>Determining the number of paces:</u>		
IF:	DO THE FOLLOWING:	MOVE:
A) 100 Meters		116 paces
B) 200 Meters	1) Move 116 paces for each 100 meters: $200 \div 100 = 2$	232 paces
	2) For each 116 paces, tie knot in shoe string or place pebble in pocket.	
	(2 knots/pebbles = 200 meters)	
C) 315 Meters	1) Follow steps 1 & 2 above for each 100 meters: $315 \div 100 = 3$, 15 remainder.	3 knots/pebbles,
	2) Multiply: remainder(15) X 116 paces = 1740	348 paces
	3) Drop last two digits: 17	17 paces (for the 15 meters)

RESOURCES:

FM 21-26, Map Reading

FM 21-2, Soldier's Manual of Common Tasks

FM 7-11B1, Soldier's Manual - Infantryman, Skill Level 1

MCI Course 03.71, The Marine Rifleman-Land Navigation

MCI Course 03.28c, Land Navigation

TASK: NAVIGATE USING MAP (G-0300-11.2/CPL)

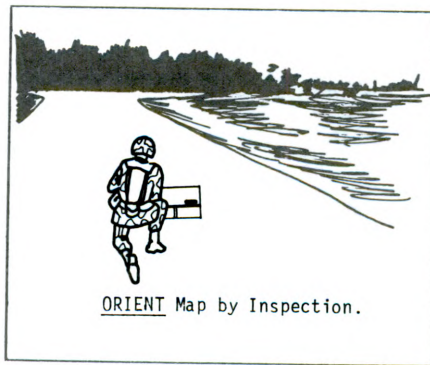
CONDITIONS: Conditions will be determined by mission requirements. You will be provided: 1:50,000 scale military map, a starting point and an objective.

STANDARD: You will navigate to a given objective.

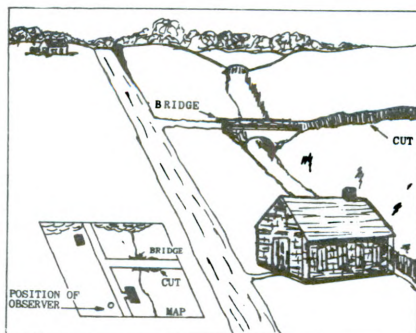
BATTLE DRILL(S): 2

PERFORMANCE STEPS:**A. Orient map by inspection.**

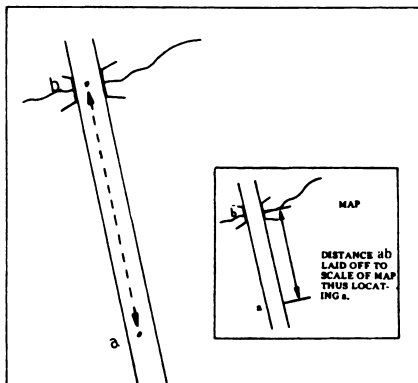
1. Observe the ground around you.
2. Look at topographical features—lakes, woods, contours, built-up areas, hills.
3. Look at linear terrain features (railroads, streambeds, roads).
4. Hold map in a horizontal position; ensure map is approximately parallel to the ground surface.
5. Select nearby features which will help identify detail on both ground and map.
6. Identify *at least three* widely separated points on both the ground and map.
7. Rotate map until the features on the map are aligned with the same features on the ground.

**B. Determine own location by map-terrain association.**

1. Identify some prominent characteristic on or near the linear feature—road junction, bridge, stream junction, etc.
2. Estimate the distance from your present position to the known point.



3. Extend a graphic scale from this known point on the map (point b) back along the linear feature toward your direction.
4. A point on the graphic scale equal to the distance estimated will be at your location (point a).



C. Move to designated point by map-terrain association.

Walk toward point selected on your map.

RESOURCES:

FM 711B1, Soldier's Manual - Infantryman, Skill Level 1
 MCI Course, 03.71, The Marine Rifleman-Land Navigation
 MCI Course, 03.28c, Land Navigation

TASK: NAVIGATE USING MAP AND COMPASS (G-0300-11.3/CPL)

CONDITIONS: Conditions will be determined by mission requirements. You will be provided: a lensatic compass, a standard 1:50,000 scale military map, a starting point and an objective.

STANDARD: You will navigate to a given objective.

BATTLE DRILL(S): 2**PERFORMANCE STEPS:****A. Orient map using compass.**

1. Open map and lay it out on a flat surface.
2. Align compass straightedge with any one of the north-south lines.
3. Examine the map's declination diagram to determine the grid/magnetic (G-M) angle.
4. Rotate map and compass together until the compass magnetic North needle points exactly to the "DIFFERENCE" of G-M angle. (See example at right.)

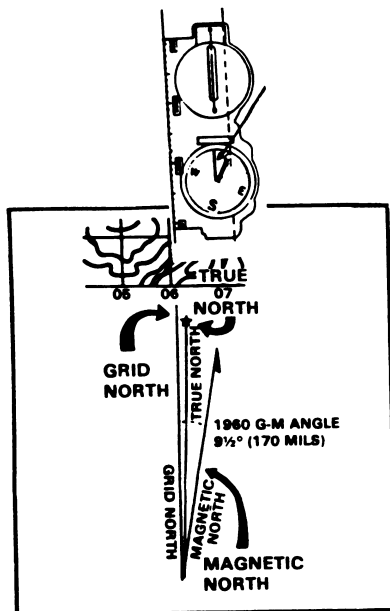
NOTE: The map is now oriented.

- Westerly G-M angle = Magnetic azimuth (-) number of degrees in G-M angle.
- Easterly G-M angle = Magnetic azimuth (+) number of degrees in G-M angle.

INFORMATION:

Grid Magnetic (G-M Angle) is the difference between grid north and magnetic north.

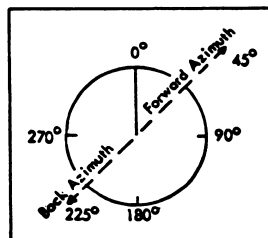
Azimuth is the direction from one point to another on a map or on the ground.

**COMPUTING BACK AZIMUTH**

- If forward azimuth is LESS than 180°, ADD 180° to the forward azimuth.
- If forward azimuth is 180° or MORE, SUBTRACT 180° from the forward azimuth.

Examples:

Forward Azimuth		Back Azimuth
350°	(+ 180°)	215°
180°	(- 180°)	0°
210°	(- 180°)	30°
125°	(+ 180°)	305°



B Convert azimuth (magnetic or grid).

Select one of the following methods to convert azimuth(s).

METHOD I

1. Use a protractor to convert the magnetic azimuth to a grid azimuth by using the G-M angle.

NOTE: The magnitude of the G-M angle is 50° in diagram at right.

- Magnetic azimuth + G-M angle = Grid azimuth.

2. Convert this azimuth to a grid back azimuth ($65^\circ + 180^\circ = 245^\circ$).
3. Use protractor, lay off grid back from b, on the map.
4. Extend it until it crosses the road.

NOTE: The point where it crosses locates your exact position along the road (point a).

METHOD II

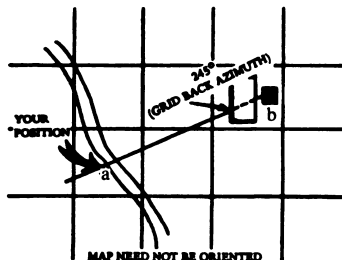
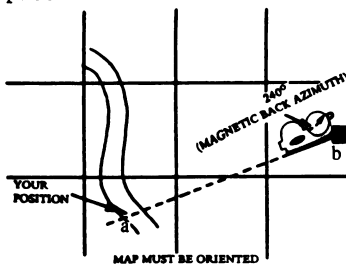
1. Carefully orient map with compass.
2. Convert the magnetic forward azimuth to a magnetic back azimuth ($60^\circ + 180^\circ = 240^\circ$).

NOTE: Do not disturb the orientation of the map.

3. Place the 0 end of the compass straightedge on point b.
4. Hold the 0 end of the straightedge at this point.
5. Rotate the compass without moving the map.

- Ensure the magnetic back azimuth 240° is under the index line.

NOTE: Your position is located where the compass straightedge, or a straightline extension of it, crosses the road (point a).

Protractor method:**Compass method:**

C. Determine azimuths from one point to another.

Select one of the following methods to determine azimuth(s).

COMPASS METHOD

1. Orient map using compass and mark points A and B for easy identification.
2. Open compass completely.
3. Place the zero end of the compass graphic scale at point A.

NOTE: Do not disturb the correct orientation.

4. Rotate the compass body until the straightedge coincides with point B.

NOTE: The magnetic azimuth from point A to point B is read under the black index line of the compass.

- If the two points are more widely separated than the length of the compass straightedge, do the following:
 - Connect two points with a straight line.
 - Place the compass straightedge along this line to determine azimuth.

CAUTION: Ensure that map doesn't shift.



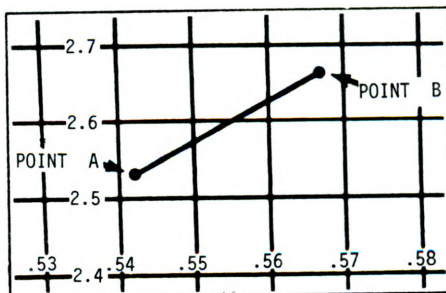
Rotate the map until the north arrow is under the index line.



Determining azimuths from the map with the compass

PROTRACTOR METHOD

1. Plot the location of the two points on the map.
2. Using a straightedge, draw a straight line (azimuth line) from point A to point B.



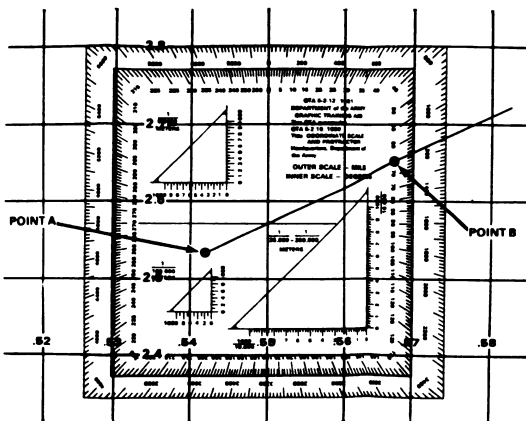
- Place the index of the protractor at the point where the azimuth line crosses one of the vertical (North-South) grid lines.

NOTE: Ensure that the 0° or 0-mil mark on the protractor is toward the top of the map (north).

- Start at the 0° mil on the protractor and read to the right (clockwise) until you reach the point where the azimuth line crosses the scale(s) of the protractor.

NOTE: Square protractor, each tickmark = 1°
Semi-circular ($^{\circ}$ scale) each tickmark = 1°
Mil Scale, each tickmark = 10 mils

- Read the azimuth where the azimuth line crosses the scale(s).

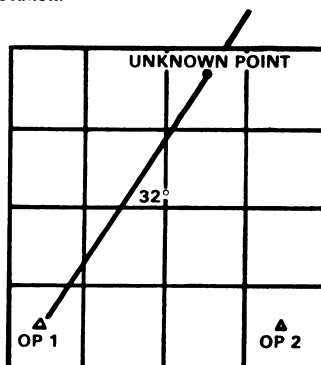


D. Determine location of unknown point by intersection.

Select one of the following methods to determine location.

MAP/COMPASS METHOD

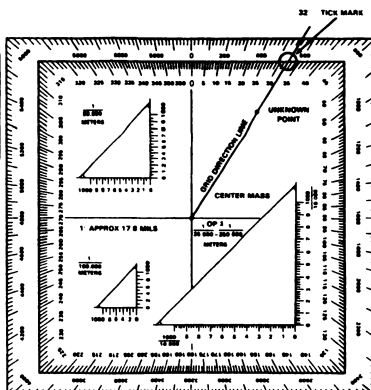
- Determine the G-M angle of the map you are using.
- Locate and mark your position on the map.
- Measure the magnetic azimuth to the unknown point.



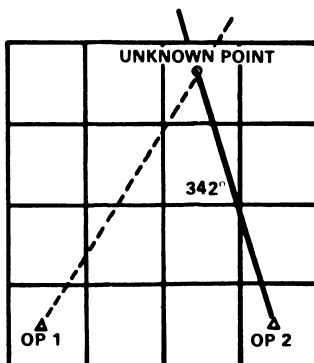
- Place the protractor on the map.

NOTE: Ensure 0° indicator is pointing to top of map (north). Ensure the index point is placed center mass on your location.

- Place a tickmark on the number of degrees you want to plot.
- Draw a line on the map from your position on this grid azimuth (32°).
- Move to or call an unknown position from which the unknown point can be seen.
- Locate position 2 on the map.
- Repeat steps 3 and 4 above.



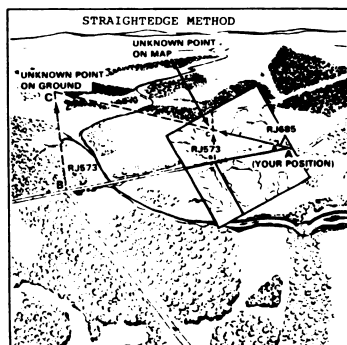
NOTE: Where the lines cross is the location of the unknown point.



STRAIGHTEDGE METHOD

- Orient map to the ground by map-terrain association.
- Locate and mark your position on the map.
- Lay a straightedge on the map with one end at the user's position A as a pivot point.
- Rotate the straightedge until the unknown point is sighted along the edge.
- Draw a line along the straightedge.
- Repeat the above procedure at position B.

NOTE: The intersection is the location of the unknown point (C).



E. Determine location by resection.

Select one of the following methods.

METHOD I

**MAP/COMPASS Method
One-Point Resection**

1. Determine the G-M angle of map.
2. Locate two known positions on the ground.
3. Mark the known positions on your map.
4. Measure the magnetic azimuth to one of the known locations.
5. Change it to a grid azimuth.
6. Change this grid azimuth to a grid back azimuth.

NOTE: To compute grid back azimuth:

- If forward azimuth is less than 180° ,
ADD 180° to the forward azimuth.
- If forward azimuth is more than 180° ,
SUBTRACT 180° from forward azimuth.

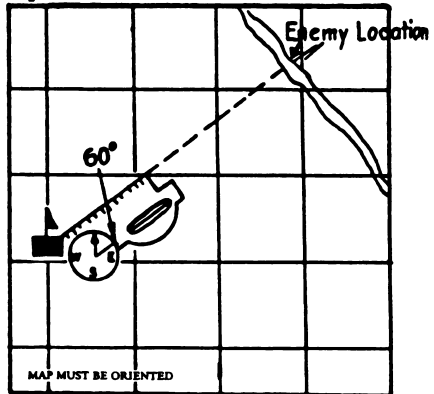
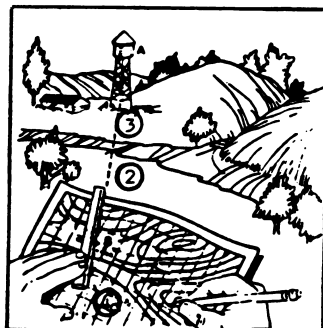
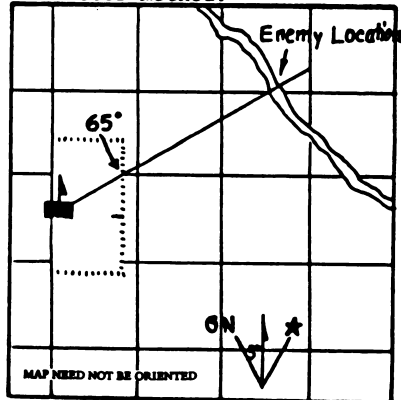
7. Place protractor on map.
8. Place a tickmark on the number of degrees you need to plot.
9. Remove protractor.
10. Draw a line on the map from the grid back azimuth position toward the direction of the unknown point.

METHOD II

**Resection without a compass
Two-Point Resection**

1. Orient map to ground feature(s) that can be recognized on map.
2. Place ruler on map and ensure its edge is next to the symbol/feature chosen in step 1. above.
3. Align the ruler so that it points exactly at the real symbol/feature.
4. Draw a line along the ruler.

NOTE: The line will cross the symbol/feature on the map.

Compass method:**Protractor method:**

5. Find another feature and follow steps 2, 3, and 4 above.
6. Draw another line along the ruler until it crosses (intersects) the first line.

NOTE: The point where the lines cross is your location D.

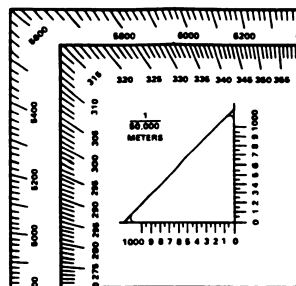


F. Determine six-digit coordinates.

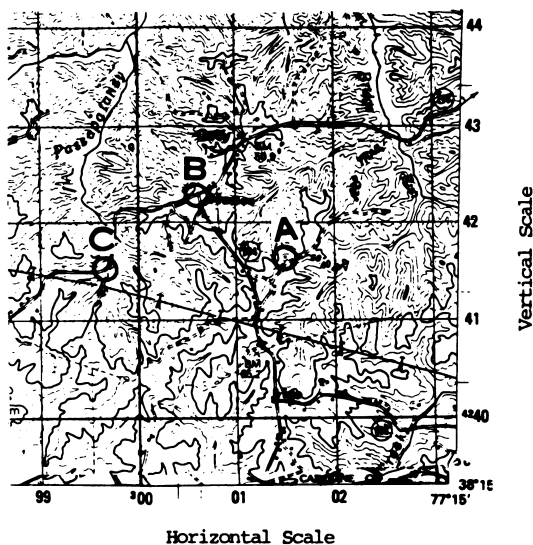
NOTE: Perform the following steps to do this exercise on grid coordinates.

1. Select $\frac{1}{50,000}$ meters scale on protractor.

NOTE: Meters scale depends on the scale of the map.



2. Use illustrated map below to determine the six-digit coordinate for small dot (.) in circle labeled A.



- a. Read **RIGHT**, horizontal scale at bottom of map.

b. Read UP, vertical scale, A falls between 41 and 42, use smaller value (41).

- Determine 6-digit coordinate.

- a. Separate the 4-digit coordinate between the 2nd and 3rd number.

b. Place protractor on map with its zeros at the left corner of the grid square.

NOTE: Horizontal scale should be on line 41. Vertical line should be on line 01.



- c. Move protractor meters scale to the RIGHT until vertical line is in center of dot in circle labeled A.
- d. Look at bottom of scale and read RIGHT.

NOTE: Notice that 5 is indicated on bottom scale exactly on vertical line 01.

- e. Write "5" between the 2nd and 3rd numbers of the 4-digit coordinate.

EXAMPLE: 01 5 41

- f. Look at the vertical scale and read UP.

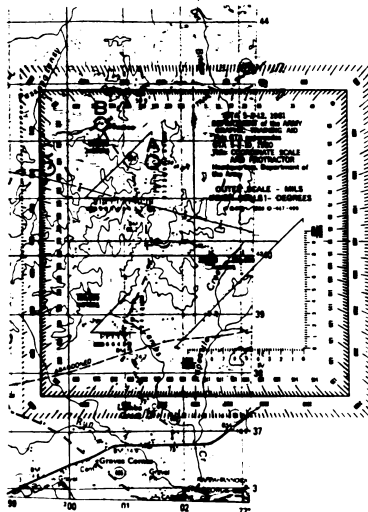
NOTE: Notice that the small dot in center of circle A is directly on the number 6.

- g. Write "6" after the last digit of the 4-digit coordinate

EXAMPLE: 01 5 41 6

NOTE: The six-digit coordinate is 015416.

3. Practice to determine B and C point(s) six-digit coordinate.
B (006422) and C (996415)



RESOURCES:

FM 7-11B1, Soldier's Manual-Infantryman
 TEC Lesson 930-071-0013F, Introduction to Land Navigation
 MCI Course 03.28c, Land Navigation
 MCI Course 03.71, The Marine Rifleman: Land Navigation
 MCI Course 03.17h, Map and Aerial Photograph Reading

TASK: APPLY FIRST AID FOR TRAUMATIC AMPUTATION (G-0300-12.1/LCPL)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a simulated casualty, tourniquet, material and bandages.

STANDARDS: The Marine will demonstrate the procedures to follow in treating traumatic amputation.

BATTLE DRILL(S): 27

PERFORMANCE STEPS:

NOTE: - Select suitable material to use as tourniquet (belt, rope, shoe string, torn clothing, scarf, etc.).
 - In the absence of a specially designed tourniquet, one may be made from a strong pliable material (gauze, clothing, or kerchiefs).
 - Perform the basic ABC treatment on casualty; check his airway, breathing, and circulation.
 - Check for other injuries and perform proper treatment.

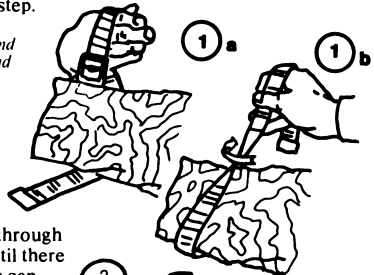
A. Apply tourniquet.**DO THE FOLLOWING:****Using SUITABLE MATERIAL****Using WEB BELT**

1. Place the tourniquet around the limb between the wound and the body trunk (or between the wound and the heart).

2. Place the tourniquet as close to amputation as possible (no more than 4 inches above the amputation).

- ① Follow same step.

- Hold the tip end of belt in hand and —
 - Give a half twist



- ② Run the belt through the buckle until there is a 2 to 3 inch gap between the buckle and the wounded limb.

- Place the tourniquet as close to amputation as possible (no more than 4 inches above the amputation).



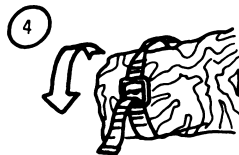
NOTE: NEVER place tourniquet directly over a wound, fracture, or directly on a joint (wrist, elbow, or knee).

3. **WHEN POSSIBLE**, place the tourniquet over smoothed sleeve or trouser leg to prevent the skin from being pinched or twisted.

4. Tie a half knot, then tie a square knot.

3. Follow same step.

- ④ Lock the belt in place with the buckle and —



-Ensure knot is tight enough to only stop bright red bleeding.

5. *IF TIME ALLOWS*, smooth the clothes under the tourniquet.

6. *IF STICK OR SIMILAR RIGID OBJECT* is used to **TIGHTEN** tourniquet, place it on top of knot and —

- Complete a full knot over the stick.

7. Twist the stick until the tourniquet is tight around the limb and/or the bright red bleeding has stopped.

- Rotate the buckle to one SIDE.

5. Follow the same step.



6. Form the loop which resulted from the half twist at top of the wounded limb.



- Place a stick, tent pole, or tent peg through the loop.

7. Tighten the tourniquet by twisting the stick in one direction until the bright red bleeding from wound has stopped.



NOTE: In the case of amputation, blood (dark colored) may continue to ooze for a short time.

8. Fasten the tourniquet to the limb by looping the free end of tourniquet over the stick and —

- Bring the ends of tourniquet around the limb.

- Tie the ends together under the limb.

- Check stick to ensure that it is secure and does not unwind.

8. Secure the tourniquet in place by wrapping the free (tip) end of the belt around the free end of the stick and under it.



NOTE: -Other methods of securing the stick may be used as long as the stick does not unwind and no further injury results.

CAUTION: -DO NOT loosen or release the tourniquet.

- Tourniquet(s) should be loosened by qualified medical personnel ONLY!!

-Tourniquet(s) should be inspected frequently to ensure that it does not loosen.

B. Dress wound/amputation.

1. Remove and use the casualty's field dressing from first aid kit, if available.

NOTE: -The following may also be used as dressing: gauze, cravat, bandages, T-shirts, other shirts, bed linens, trouser legs, scarfs or any other items made of pliable and durable material that can be folded, torn, or cut to desired size.

2. AS NECESSARY, remove as much clothing as needed from around casualty's injury.

-Cut the clothing and carefully lift clothing away from the wounded area to avoid further contamination.

NOTE: DO NOT tear the clothing.
DO NOT touch the wound.
KEEP the wound as clean as possible.
IF it is dirty, LEAVE it that way.

CAUTION: If in a chemical (toxic) environment, DO NOT expose wound(s).
IMMEDIATELY place the dressing over the wound(s) and secure it in place.

3. Place the dressing on the wound and secure it in place.

- Remove dressing from wrapper.

-Grasp the tails of the dressing with both hands.

-Hold the dressing directly over the wound.

-Pull dressing open and-

-Place it directly over the wound.



-Hold the dressing in place with one hand.

-Use the other hand to wrap the tails around the dressing and the injured body part/stump to anchor dressing in place securely.



-Tuck/tie each dressing in, around, and under (already wrapped) tails(s) to SECURE in place.



NOTE: The casualty's sock or other material may be placed over the field dressing to protect the amputation.

CAUTION: -DO NOT tie knot over the wound.
- Apply dressing firmly to:
— Prevent it from slipping.
— Prevent the stoppage of blood flow to the rest of the limb.

4. IF: DO THE FOLLOWING:

Bleeding Continues

- a. Place a wad of padding on top of the field dressing, **DIRECTLY** over the wound.
- b. Place an improvised dressing (or cravat, if available) over the wad of padding.
- c. Wrap the ends tightly around the limb, covering the previously placed field dressing.
- d. Tie the ends together in a nonslip knot, directly over the wound site.
- e. Raise the wounded limb 2 to 4 inches by placing limb on top of a log or other suitable object.

5. Treat for shock, if required.

- Place casualty's arm(s) and hand(s) on chest.
- Cover casualty to keep warm until transported to medical facility.
- Elevate lower extremities.

C. Mark casualty.

1. Mark the casualty by writing a capital "T" on forehead.

NOTE: Ensure that the marking is visible. Use dark marker, if available, soot, mud, or victim's blood.

2. Write the time and date on tourniquet and casualty's forehead to indicate when the tourniquet was applied.



RESOURCES:

FM 21-11, First Aid for Soldiers
Hospital Corpsman 3 and 2, NAVEDTRA 10669-B, 1981

**TASK: APPLY FIRST AID FOR WHITE PHOSPHORUS (WP) BURNS
(G-0300-12.2/LCPL)**

CONDITIONS: Conditions will be performed in accordance with mission requirements. You will be provided: a simulated casualty.

STANDARD: You will demonstrate the procedures to follow in treating white phosphorus burns IAW resource(s).

BATTLE DRILL(S): 27

PERFORMANCE STEPS:

A. Smother the flame.

1. Smother the flame by submerging or dousing the burned body area with cold water for two to five minutes or longer.

NOTE: Do not waste time; use the water in your canteen or any other source (urine, a wet cloth, or mud).

NOTE: White phosphorus (WP) is poisonous to the system. Grease or oil should NOT be used to smother the flame because the WP will be absorbed into the body.

2. If you can, take off contaminated clothing quickly before the phosphorus burns through to the skin.

B. Remove white phosphorus particles.

1. Use wet cloth to remove WP particles that can be easily brushed away.
2. Pick out other WP particles with a bayonet or stick.

NOTE: Use care not to further damage the affected area.

C. Keep WP particles covered with wet material until they can be removed from the skin.

1. If available, wet and place copper sulfate pads over the burning white phosphorus.
2. Keep burned area covered with a wet sterile dressing or clean sheet to exclude air.
3. Use cool wet applications for relief of pain if necessary.

RESOURCES:

FM 21-11, First Aid for Soldiers
FM 8-230, Medical Specialist
Emergency Care and Transportation of the Sick and Injured, American Academy of Orthopedic Surgeons, 2nd Ed.

TASK: DETECT CHEMICAL AGENT WITH M256 CHEMICAL AGENT DETECTOR KIT (G-0300-13.2/LCPL)

CONDITIONS: Conditions will be determined by mission requirements. You will be provided: an M256 Chemical Agent Detector Kit and a constructive chemical environment.

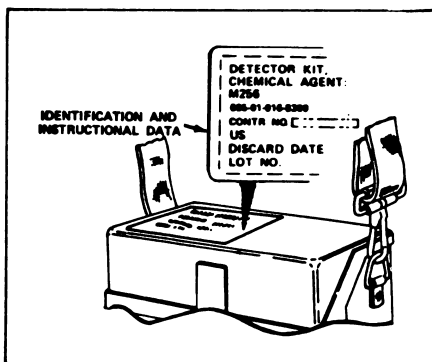
STANDARD: You must be able to identify the presence/absence of chemical agent(s).

BATTLE DRILL(S): 1

PERFORMANCE STEPS:

A. Check discard date on outside of M256 Kit.

1. Inspect outside of kit upon receipt.
2. Look on top of kit for IDENTIFICATION and INSTRUCTIONAL data label.
3. Check kit for broken/missing straps.
4. If kit has expired and/or have broken/missing straps, RETURN it to supply and request a new kit



B. Check inside of kit.

1. Open kit so that contents are visible.
2. Remove sampler detectors from case and count them.

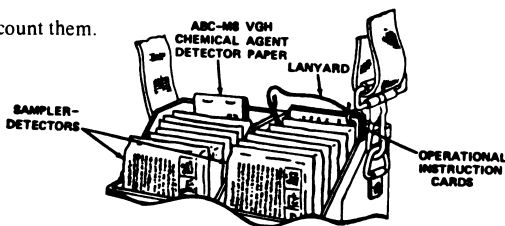
- If fewer than five, return kit and requisition a new one.

3. Check each protective bag for punctures, rips, or tears.

- If damage is found, discard the bag(s).

4. Check the discard date on each protective bag to ensure it has not expired.

- If expired, do not use, DISCARD.



NOTE: Ensure that you have at least five usable sampler detectors.

5. Remove the OPERATIONAL INSTRUCTION CARDS.

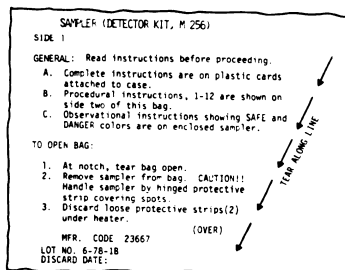
-Ensure that there are three (3) cards.

6. Check to ensure that both sides of each are legible.

- If card(s) is missing or not legible, requisition NEW kit.

7. Check to ensure that a book of M-8 paper is in kit.

- If not in kit, obtain a book of M-8 paper.



NOTE: After inspection, repack components in kit identically as they were originally packed.

C. Take air samples.

1. When required to take air samples, open kit and remove the OPERATIONAL INSTRUCTION CARDS.

- Ensure that there are three cards.

2. Read the instructions on the three operational instruction cards **FIRST!!**

3. Read instructions AGAIN, if necessary.

4. Remove a sampler-detector from the kit.

5. Read instructions on sampler-detector protective bag.

CAUTION:- Protect sampler-detector from excessive moisture, such as rain and dew.
- Avoid direct sunlight.

6. Keep the protective bag for reference to the instructions on it.

7. Read instructions again, and follow outlined steps for taking air samples.

CAUTION: Do not touch the sampler-detector agent test spots because incorrect test results may be produced.

8. Refer to OPERATIONAL INSTRUCTION CARDS for additional step by step procedure(s) for taking air samples.
- See illustrations provided for outlined OPERATING INSTRUCTIONS on cards 1, 2, and 6.

NOTE: CARDS 3, 4, and 5 are not included below because there are NO written instructions on those cards.

CARD Number	ILLUSTRATION
3	Sampler Component Identification
4	Safe Observations (absence of agent)
5	Danger Observations (agent present)

Components: Carry Case, with straps
Samplers, in protective bags

GENERAL

1. This kit detects dangerous concentrations of toxic agents by color-changing reactions.

Agents detected include: Blister, Muster (H) and (HD) Nerve (G) and (V)
Phosgene Oxime (CX) Blood Hydrogen Cyanide(AC)
Lewisite (L) Cyanogen Chloride(CK)

2. The tests indicate: (a) if it is permissible to REMOVE the protective mask following an agent attack, (b) if agent is present in the air or on surfaces suspected of contamination, (c) if any agent is present after decontamination operations. If ANY test is positive, KEEP MASK ON. After determining the absence of chemical agents, unmasking procedures shall be in accordance with conditions set forth in FM 21-40.
- B. The instructions provide: page 1, operating instructions; page 2, detailed instructional procedures; page 3, design features of the sampler; pages 4 and 5, examples of safe and danger colors for each chemical agent; and page 6, additional instructions and notes for unusual environments. The ABC-MB booklet is reusable and is to be repacked in the carry case.
- C. The protective bag provides general instructions and bag opening instructions on side one to gain access to the sampler properly; procedures 1-14, with pictures, are located on side two.
- D. Test for Lewisite, procedures 12 and 13, must be observed for color change immediately after rubbing second mark. Test for Nerve agent, procedure 14, must be observed for color change 2 minutes after procedure 11.
- E. Discard sampler if there are any broken or missing ampules or missing spots.

CARD 1



1. Protective strip should still cover spots.
2. Pull and discard tab #1 as pictured below to expose tablet.
3. Rub top half of white paper tab #2 on tablet.
4. Hold sampler with arrow up (↑). Using heater pads, crush ampules in three center pockets (#3).
5. Rotate sampler so arrow is down (↓). Force liquid to each spot with right hand while pressing protective strip with left hand to ensure wetting of covered spots.
6. With left thumb over center of protective strip, hold sampler flat and swing heater (green ampules) away from blister spot.
7. Being sure NOT to use pads, crush one heater ampule #4 and swing heater over spot. Vent heater vapor away from operator's body.
8. Leave heater over spot for 2 minutes, then swing heater and protective strip away from spot.
9. Expose spots to air (shielding from direct sun) for 10 minutes.
10. Crush 2d green ampule #4 and swing heater back over test spot. Leave in place 1 minute. Swing heater away from spot.
11. Hold sampler with arrow down (↓). Crush two outside ampules #5 with pads.
12. Rub bottom half of white paper tab #2 next to 1st mark.
13. Immediately look for a difference in color between the two marks.
14. Turn sampler over to determine safe or danger conditions. Wait 2 minutes for nerve agent results. Disregard any blue edge around nerve spot rim.

CARD 2

O

ADDITIONAL INSTRUCTIONS

- A. Blister
 - 1. At high temperature, a faint blue color may appear in the absence of H.
 - B. Nerve
 - 1. Disregard small blue areas under the plastic rim.
 - 2. At high temperature and low humidity (desert conditions), rewet with buffer (ampule 3) five minutes after exposure is started (page 2, procedure 9).
 - 3. Nerve spot may become difficult to wet with solutions as the kit ages. Work solutions to spot carefully.
 - C. Lewisite
 - 1. At low concentrations or high humidity, change in tablet rub mark may be very slight. Compare with second rub mark before making judgement.
 - D. Blood
 - 1. Yellow and orange sometimes occur on spot when no agent is present. Pink or blue color must be present for a positive test.
 - 2. If spot is pink before exposure (procedure 9), discard sampler.
- NOTES**
- A. Nerve, Blood, and Blister tests must be read no later than 3 minutes after procedure 11.
 - B. If chemical agents are present as gases or aerosols, they will be removed by the wind or ventilation, provided the upwind area is uncontaminated. If chemical agents are present as surface contamination, they will persist until evaporated, decontaminated, or removed. Higher surface temperature or lower wind speed may cause increased concentrations of agent.
 - C. Avoid sampling in screening smokes or burning debris.
 - D. Protect sampler, during exposure, from excessive moisture (rain, dew, etc.)
 - E. Disregard any spot caused by spattering heater fluid.
 - F. Lewisite and Blister tests should not be performed in areas where STB has been used.

CARD 6

RESOURCES:

TM 3-6665-307-10, Detector Kit, Chemical Agent: M256

TASK: PREPARE AND SUBMIT NBC-1 REPORTS (G-0300-13.3/CPL)

CONDITIONS: Conditions will be determined by mission requirements. You will be provided with a general description of the constructive attack and specific data lines B, C or F, D and H, and G if known.

STANDARD: Within 5 minutes after notification, you will prepare and submit by radio (flash) and NBC-1 report, reporting as a minimum lines B, C, D, H, G and F, if known.

BATTLE DRILL(S): 1

PERFORMANCE STEPS:

- Study the complete NBC-1 Report below.
- The following is an EXAMPLE to follow as you complete an actual report.

NOTE: -The report format provides a rapid means for disseminating information.
 -SPEED is more essential than security in reporting enemy attacks.
 -Report the BASIC requirements:
 - Type of REPORT
 - Line item B
 - Line item C or F (whichever is applicable)
 - Line item D
 - Line item H
 - OTHER LINE ITEMS are optional; however, REPORT them if known!!

EXAMPLE:

N B C - 1 REPORT

LETTER	MEANING	EXAMPLE
A.	Precedence Date Time (local or ZULU time, state which) Security Classification From To Type of Report	A. NBC-1
B.	Position of Observer (UTM or place)	B. MARVILLE (Place)
C.	Direction measured clockwise from grid or magnetic north (state which) of the attack from observer (degrees or mils, state which).	C. Magnetic 60 degrees

LETTER	MEANING	EXAMPLE
D.	Date/time attack started (local or ZULU time, state which). If local time is used, give the letter of the local time zone, if known. See FM 101-10-1 for time-zone charts. If the local time is used and the time-zone letter is not known, the word "local" will be transmitted with this item.	D. 201405 (local)
*E.	Time attack ended (local or ZULU, state which).	E. 201412 (local)
F.	Area attacked (actual or estimated, state which).	F. LB 205305 estimated
*G.	Means of delivery, if known.	G. Artillery
H.	Type of agent, if known (chemical or biological). Type of attack (chemical or biological). Surface or airburst for nuclear.	H. Airburst, nerve Surface
*I.	Type and number of munitions or aircraft (state which).	
* In case of emergency, these items are not necessarily reported.		

p. 2 of 3

- Complete the NBC-1 REPORT by using the dictated line items to assist you.

EXAMPLES

- **Write down own location (LINE B).**

Record "Position of Observer" that is applicable to the situation. (UTM or place)

B. LB 196400 (or)
Marville

- **Write down direction to the attack from the observer (LINE C).**

- Locate item "C" and record requested information.

- Direction measured clockwise from grid on magnetic north. (Degrees or mils). Magnetic, or grid, state which.

C. Magnetic 60°

- **Write down time attack started (LINE D).**

Locate the letter "D" and record applicable information as related to the situation.

D. 201405Z

- Date/Time of detonation (local time or ZULU, state which).

● **Write down location of attack (LINE F).**

Record area attacked (actual or estimated, state which).

F. UTM Grid coordinates
or Town

● **Write down means of delivery (LINE G), if known**

Record means of delivery, if known.

G. Artillery

● **Write down type of attack (air or surface for nuclear and type of agent for chemical and biological) (LINE H).**

Locate the letter "H" and record applicable information according to the situation.

- Type of agent, if known (chemical or biological). Type of attack (chemical or biological). Type of burst (surface or air).

H. Airburst, nerve
(chemical)
Surface (Nuclear)

RESOURCES:

MCI Course 57.7i, Nuclear Warfare Defense
MCI 7304C, Nuclear, Biological, and Chemical Warfare Defense
FM 3-3, NBC Contamination Avoidance, April 85
FMFM 3-4, NBC Protection

TASK: INITIATE UNMASKING PROCEDURES (G-0300-13.4/LCPL)

CONDITIONS: Conditions will be determined by mission requirements. You will be provided: a group of Marines wearing protective masks and a constructive NBC environment, a chemical agent detector kit may or may not be available.

STANDARD: You must perform all steps in sequential order to ensure that all Marines in the group unmask safely.

BATTLE DRILL(S): 1, 27 through 30

PERFORMANCE STEPS:**A. Unmask when a chemical agent detector kit is available:**

1. Use the kit contents correctly by following step by step instructions on OPERATIONAL INSTRUCTION CARDS to detect presence of chemical agents.

WARNING: Marines told to unmask are **DISARMED** prior to unmasking.

2. If no chemicals are thought to be present, *select* two or three Marines to unmask, in the shade for five minutes, to verify kit results.
3. After five minutes, instruct the *selected* Marines to remask for ten minutes.
4. After ten minutes, check those Marines for symptoms of chemical agent(s).
5. If no symptoms are detected, instruct all Marines to unmask.
6. CAUTION ALL Marines to be alert for symptoms. See chart below:

TYPE OF AGENT	SYMPTOMS IN MAN	FIRST AID	INDIVIDUAL DECONTAMINATION	PROTECTION REQUIRED
NERVE	Detection breathing, drooling, nausea, vomiting, convulsions, and sometimes dim vision.	Give atropine injection. Artificial respiration or resuscitation may be necessary.	None needed. Flush eyes with water; use skin pad from M13 kit or wash skin with soap and water.	Protective mask and protective clothing
BLISTER	Mustard; nitrogen mustard—no early symptoms. Lewisite; mustard-lewisite;—searing of eyes and stinging of skin. Phosgene oxime—irritation of eyes and nose.	None.	Flush eyes with water; use skin pad from M13 kit or wash skin with soap and water.	Protective mask and protective clothing
BLOOD	Convulsions and coma.	Inhale amyl nitrate. Artificial respiration may be necessary.	None needed.	Protective mask
CHOKING	Coughing, choking, nausea, and headache.	For severe symptoms, avoid movement and keep warm.	None needed.	Protective mask
IRRITANT	Coughing and copious tears.	Face the wind with eyes open; do not rub eyes.	Flush eyes, face and skin with water.	Protective mask

TYPE OF AGENT	SYMPTOMS IN MAN	FIRST AID	INDIVIDUAL DECONTAMINATION	PROTECTION REQUIRED
PSYCHO-CHEMICAL	Unpredictable, irrational behavior may be accompanied by coughing, nausea, vomiting, and headache.	Remove excess clothing in temperatures above 78°F fan vigorously to lessen duration of effects.	Wash with soap and water.	Protective mask

B. Unmask when a chemical agent detector kit is not available:

1. Select two or three Marines.
2. Instruct *selected* Marines to do the following:

WARNING: Marines told to unmask are DISARMED prior to unmasking.

 - Take a deep breath and HOLD it.
 - Break the seal of the mask for 15 seconds keeping eyes wide open.
 - After 15 seconds, reseal the mask.
 - Clear and check mask.
 - Wait in the shade for 10 minutes.
3. After 10 minutes, check these Marines for symptoms. (See above chart.)
4. If no symptoms appear, instruct the same Marines to do the following:
 - Again, break the seal of the mask.
 - Take two or three breaths.
 - Reseal mask.
 - Clear and check the mask.
5. Instruct the Marines to wait in the shade for 10 minutes.
6. After 10 minutes, check the Marines for chemical agent symptoms.
7. Instruct them to unmask in the shade for five minutes.
8. After five minutes, instruct them to remask for 10 minutes.
9. Check Marines for chemical agent symptoms.
10. If no symptoms appear, instruct ALL Marines to unmask.
11. CAUTION ALL Marines to be alert for chemical agent symptoms. (See above chart.)

NOTE: Bright light will cause contraction of the pupils, which could be erroneously interpreted as a nerve agent symptom.

RESOURCES:

FM 21-40, NBC Defense
 FM 3-4, NBC Protection
 MCI Course S7 7i: Nuclear Warfare Defense

**TASK: CROSS CONTAMINATED AREA BY VEHICLE AND ON FOOT
(G-030013.5/PVT)**

CONDITIONS: Conditions will be determined by mission requirements. You will be provided: simulated contaminated area to be crossed, a tactical vehicle, MOPP gear, radiac instruments (Dosimeter IM-143-PD, M256 chemical agent detector, decontamination kit M258A1) and M9 detector paper. You may be assigned as the driver or passenger.

STANDARDS: Evaluator must determine if the procedures you followed would have resulted in successfully crossing the contaminated area.

BATTLE DRILL(S) 1

PERFORMANCE STEPS:

DO THE FOLLOWING:

DRIVER/PASSENGER

INDIVIDUAL(S) on FOOT

A. Ensure proper operation of radiac instruments.

1. Dosimeter (IM-143-PD)

- Follow the same steps.

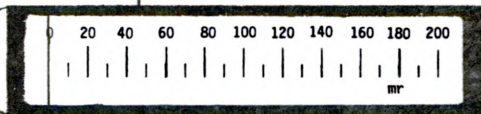
NOTE: This instrument is used to detect and measure amount of radiation exposure in Mrads.

- a. Hold the radiac instrument up to a source light.
- b. Look through the eye piece lens.
- c. Read the instrument scale.

NOTE: The scale should appear as in the figure for "fully charged and ready for use."



Fully charged and ready for use



- d. If the scale does not measure "0" (as in figure), return to supply and requisition new dosimeter.

DO THE FOLLOWING:**DRIVER/PASSENGER****INDIVIDUAL(S) on FOOT**

2. M256 Chemical Agent Detector Kit
 - a. Check M256 chemical agent detector kit to ensure serviceability. (See Task: DETECT CHEMICAL AGENT WITH M256 CHEMICAL AGENT DETECTOR KIT G-0300-13.2.)
 - b. If not serviceable, return to supply and requisition another kit.
3. Decontamination Kit (M258A1)
 - a. Check Decontamination Kit for serviceability.
 - b. Ensure that you have the following:
 - Case and cover front and back
 - Foil, Decon 1 wipe
 - Foil, Decon 2 wipe
 - Prewetted pad
 - Impregnated pad
 - Mesh
 - Glass ampule
 - c. If any item(s) is missing and/or damaged, return to supply and requisition new kit.

Follow same steps.

B. Ensure proper vehicle operation (if assigned as driver).

1. Perform vehicle maintenance and safety check IAW mission requirement(s). (Not Applicable)
2. Make adjustments to vehicle and equipment to ensure proper completion of mission, if necessary. (Not Applicable)

DO THE FOLLOWING:**DRIVER/PASSENGER****INDIVIDUAL(S) on FOOT**

3. Prepare to drive vehicle.

(Not Applicable)

C. Don protective clothing and equipment.

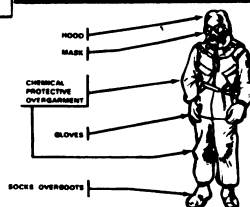
1. Check clothing and equipment to ensure that you have all necessary items.
2. Put on required items for the specified MOPP Level.

NOTE: Your leader will specify the MOPP Level based on the chemical threat, work-rate, and temperature prior to performing the mission.

NOTE: MOPP Level 4 is required for driver of vehicle and passenger.

MOPPLEVELS

MOPP	PROTECTIVE EQUIPMENT			
	OVERGARMENT	OVERBOOTS	MASK/HOOD	GLOVES
1	Worn opened or closed based on temperature.	Control	Control	Control
2	Same as MOPP 1	Worn	Control	Control
3	Same as MOPP 1	Worn	Worn, head opened or closed based on temperature	Control
4	Worn, closed	Worn	Worn	Worn

PROTECTIVE CLOTHING AND EQUIPMENT**D. Fasten M9 detector paper to protective clothing and equipment.**

1. Apply strips of M9 detector paper to your protective clothing, individual equipment, and vehicle.

- Follow the same steps.

NOTE: - M9 detector paper may be placed on the ankle, wrist or upper arm of your protective clothing.

- It may also be routinely placed on vehicles, equipment, and terrain surfaces for visual warning and monitoring for liquid chemical agent attack.

DO THE FOLLOWING:

DRIVER/PASSENGER

INDIVIDUAL(S) on FOOT

2. Detect possible presence of liquid chemical agents (if any).
3. Make note and report color changes to leader.

WARNING: - Always wear protective gloves when touching detector paper.
- Do not place detector paper on skin.

NOTE: M9 detector paper will not detect chemical agent vapors.

E. Travel upwind of the contamination.

(Not Applicable)

1. Select route(s) or bivouac area(s) on high ground.

NOTE: Chemical agents settle in low areas.

2. Move toward area(s) selected.
3. Walk at a pace that will not stir up excess dust.

F. Adjust vehicle speed.

- Drive vehicle at a speed that will limit the amount of dust in the area.

(Not Applicable)

DO THE FOLLOWING:

DRIVER/PASSENGER	INDIVIDUAL(S) on FOOT
G. Reduce stopping. 1. If assigned as driver, limit complete stops whenever possible. 2. Proceed at a speed that will allow you to collect data and complete the mission properly. NOTE: In radiological contaminated area(s), travel at the fastest and safest speed to avoid increased radiation exposure.	(Not Applicable)
H. Avoid unnecessary contact with contaminated surface(s). (Not Applicable)	1. Do not touch or go near contaminated surfaces. 2. Do not enter contaminated buildings. 3. Do not touch or go near contaminated debris, wood, shrubbery, tall grass or puddles. 4. Do not enter contaminated cellars, trenches, gullies, valleys, or other low places where chemical agents might collect.
I. After crossing, buddy-up, and remove dust. NOTE: These steps apply to driver/passenger and individuals on foot.	1. Pair off into two's.

DO THE FOLLOWING:**DRIVER/PASSENGER****INDIVIDUAL(S) on FOOT**

NOTE: These steps apply to driver/passenger and individuals on foot.

2. Take turns brushing dust from each other's clothing and equipment.
3. Check for presence of liquid contamination on equipment.
4. If contamination is present, perform decontamination procedures.
 - a. Seek overhead cover or use a poncho to protect against further contamination, if necessary.

- b. Use M258A1 kit; snap open your decon kit.

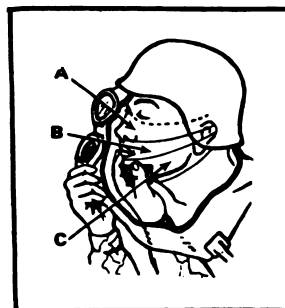
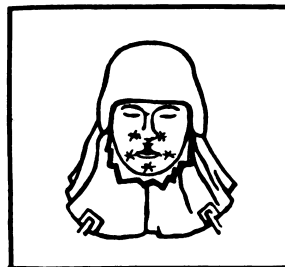
NOTE: Remove gloves, and roll hood up around mask.

- c. Pull out a decon 1 wipe packet by its tab.
- d. Fold packet on solid line marked "BEND," then unfold.
- e. Quickly tear open packet at notch and—
- f. Remove wipe and fully unfold.
- g. Wipe skin.
 - Start with hands.
 - If your face was contaminated, wipe your face.
- h. Decontaminate your face and inside of mask

NOTE: The marked areas in the figure show areas that are hard to decon. When you use the decon 1 wipe, scrub these areas with an **EXTRA STROKE**.

WARNING: Do not scrub above area indicated by dotted line. See figure, area marked **A**.

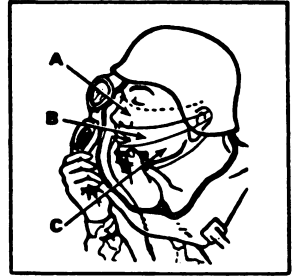
- HOLD breath, CLOSE eyes and—
- Lift hood and mask from chin.
- **Scrub area A.**
 - Start at ear and scrub up and down across face to corner of nose.
 - Scrub across nose to corner of nose.
 - Scrub across face to other ear.



NOTE: If you need to breathe before completing skin decon, reseal, clear, and check mask.

DO THE FOLLOWING:**DRIVER/PASSENGER****INDIVIDUAL(S) on FOOT****-Scrub area B.**

- Scrub up and down across cheek to corner of mouth.
- Scrub across closed mouth to center of upper lip.
- Scrub extra stroke above upper lip.
- Scrub across closed mouth to corner of mouth, perform extra stroke.
- Scrub across cheek to end of jawbone.

**-Scrub area C.**

- Scrub up and down across and under jaw to chin, cupping chin.
- Scrub extra stroke at cleft of chin.
- Scrub across and under jaw to end of jawbone.
- Turn your hand outward and—
- Quickly wipe the inside of mask that touches your face.

NOTE: Do not wipe mask lens.

- i. Immediately seal mask, clear it and check it.
- j. Using the same decon 1 wipe, scrub neck and ears and rewipe hands.
- k. Drop wipe to the ground.
- l. Pull out one decon 2 wipe packet.
- m. Crush enclosed glass ampules between thumb and fingers. **DO NOT KNEAD.**
- n. Fold packet on solid line marked “CRUSH AND BEND” and unfold.
- o. Quickly tear open at notch and remove wipe.
- p. Fully unfold wipe and let the crushed glass ampules fall to the ground.
- q. Using decon 2 wipe, repeat contamination procedures listed under “h.”

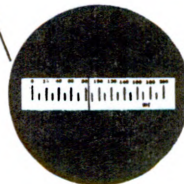
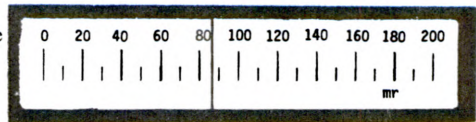
DO THE FOLLOWING:**DRIVER/PASSENGER****INDIVIDUAL(S) on FOOT**

- r. Put on protective gloves.
- s. Fasten hood and cover skin areas that you have decontaminated.
- t. Dispose of wipe(s) according to leaders instructions.

J. Check dosimeter for reading.

NOTE: The steps apply to driver/passenger and individuals on foot.

1. Hold the instrument up to an external light source.
 2. Look through the eye piece lens noting the position of the fiber image on the scale.
 3. Read the scale to determine the measure of centigray or cGY.
- See figure example.



Reading after dosage of 83 cGY

RESOURCES:

FM 3-4, NBC Protection
 FM 3-5, NBC Decontamination
 FM 3-100, NBC Operations
 MCI Course, 57.7i, Nuclear Warfare Defense
 MCI Course, 03.73, The Marine Rifleman-First Aid, Sanitation, and NBC

TASK: ESTIMATE SITUATION (G-0311-14.1/CPL)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a mission and a tactical scenario.

STANDARD: Using the METT and KOCOA formulas, you will be able to select the course of action which offers the greatest possibility of success.

BATTLE DRILL(S) 1**PERFORMANCE STEPS:**

A. Analyze mission, enemy, terrain and weather, and troops and fire support (METT) available.

1. Estimate the situation.

- Analyze MISSION to ensure that it addresses WHO, WHEN, WHERE, WHY, WHAT.
- Ensure that the operation order answers: WHO, WHEN, WHERE, WHY, WHAT.
- Allow a QUESTION and ANSWER period to clarify any instructions not clearly understood by ALL members of the patrol.

NOTE: Estimate the situation - a problem-solving process in arriving at a decision which offers the greatest possible success.

(WHAT) (WHERE)
EXAMPLE: "First Squad attacks at 1430, secures hill X, and provides base
 (WHO) (WHEN)
 of fire for Second and Third Squads. (WHY)

- Learn all you can about the ENEMY.
- Review intelligence reports/summaries, individual/subordinate reports.
- Make a written record about the enemy's:

— strength — composition — location — weapons	— tactical disposition — combat efficiency — capabilities — recent significant activities
--	--
- Study all available information and make a list of what the enemy is capable of doing.

EXAMPLE: Enemy is capable of defending present position, enemy is capable of withdrawal to the north, or enemy is capable of attacking.

- Outline the course of action which offers the greatest chance of success.
- Analyze the **TERRAIN** and **WEATHER** to be familiar with the topographical features of the particular operational area.
- Study friendly and enemy strategy.
- Consider weather's status to include:
 - visibility
 - movement
 - equipment to be used
 - fire support

NOTE: The weather's status, present and predicted will affect plans and actions.

- Consider the unit's **TROOPS** and **FIRE SUPPORT AVAILABLE**.
- Compare own unit's strength and location with that of the enemy.
- Determine what assistance is available from supporting weapons.

B. Analyze military aspects of terrain. (KOCOA)

1. Analyze the **KEY TERRAIN** features of locality in order to control the area that gives marked advantage to the success of the mission.
2. Ensure the area affords good **OBSERVATION** and fields of fire to see the enemy under various conditions of terrain and weather.
3. Ensure that the area provides **COVER** and **CONCEALMENT** from the enemy.

NOTE: The area may have wooded areas, buildings, valleys, hills, gullies, ravines, folds in the ground, and similar features.

4. Analyze **OBSTACLES** which are natural or artificial terrain features that stop, delay or restrict movement.
 - Determine whether they help or hinder your mission requirements.
5. Analyze and determine **AVENUES OF APPROACH** that permit a route of movement for a unit.
 - Ensure that the route provides:
 - ease of movement
 - cover and concealment
 - favorable observation and fields of fire
 - adequate maneuver room

RESOURCES

FMFM 6-4, Marine Rifle Company/Platoon
 FMFM 6-5, Marine Rifle Squad
 OH 6-6, Marine Rifle Squad

TASK: PREPARE AND ISSUE ORAL OPERATION ORDER
(G-0311-14.2/SGT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: higher-level operation order and a map.

STANDARD: You will give an order to subordinates that follow the five paragraph form. Perform steps sequentially.

BATTLE DRILL(S) 1

PERFORMANCE STEPS:

A. Issue warning order.

1. Prepare and issue warning order to all patrol members.

NOTE: Warning Order may be issued orally or in written form.

2. Include the following elements in the Warning Order:

- **SITUATION**, a brief statement of enemy and friendly situations.
- **MISSION**, clear, concise statement of what is to be accomplished; addresses the questions: who, what, when, where, why
- **GENERAL INSTRUCTIONS**, organization and general tasks to elements and teams
- **CHAIN OF COMMAND**
- **UNIFORM** and **EQUIPMENT** common to **ALL**
- **WEAPONS, AMMUNITION, EQUIPMENT**
- **TIME, PLACE, UNIFORM, and EQUIPMENT** for receiving Patrol Order
- **TIMES** and **PLACES** for inspections and rehearsals
- **SPECIFIC INSTRUCTIONS** to subordinate leaders and to special purpose teams or key individuals

3. Follow Warning Order outline below to assist you.

[illegible]

- | | | | | |
|-------------------------|--------------------------|------------------|---------|----------|
| 1. NAME | 4. SPECIAL ORGANIZATION | 7. TIME SCHEDULE | A. WHEN | C. WHERE |
| 2. CHAIN of COMMAND | 5. ARMS, AMMO, EQUIPMENT | | B. WHAT | D. WHO |
| 3. GENERAL ORGANIZATION | 6. GEAR COMMON TO ALL | | | |

B. Begin planning.

1. Plan use of available time.

- Use *HALF RULE*, see illustration below:

EXAMPLE**Half Rule**

Time you receive your order 0600, time of attack 1000; subtract 0600 from 1000 and divide the time you now have to work by 2. In this example your hours to work with are 4 divided by 2 equals(=) 2. This means you have two hours to complete your troop leading steps and your subordinates have two hours to accomplish their procedures and tasks.

Reverse Planning

Time of attack	1000	
Final inspection of weapons & equipment	0950	(10 min.)
Supervise	0800	(50 min.)
Issue the order	0750	(10 min.)
Complete the plan	0730	(20 min.)

- Begin the estimate.
- Consider *METT* and *KOCSA*.
- Make a preliminary plan.
- Decide formation/organization of squad.
- Decide type and number of weapons to support mission.
- Decide ammunition and rations to be used.

C. Arrange for and make a reconnaissance.

1. Plan for reconnaissance.

- Consider route(s) to be used.
- Select recon team.
- Determine specific instructions to support mission and attached leaders.
- Select messenger to accompany recon team, if required.

2. Plan issuance of order.

- Notify fire team leaders of time and place at which order is to be issued.

3. Coordinate plans.

- Meet with adjacent and support units.
- Control movement of unit.
 - Issue warning order.
- Check tentative plan(s) to include:
 - casualty evacuation
 - handling of prisoners
 - use of support arms

4. Complete the estimate of situation.

- Confirm or change key and relevant facts.
- Determine effects to preliminary plan.
- Adopt/alter plan as applicable.
- Confirm or change tactical control measures.

5. Select a vantage point.

NOTE: Location should provide concealment and enable team members to view entire area of operation.

6. Coordinate with adjacent squads and supporting unit(s).

- Assist in/provide for two-way communications.
- Confirm/change portion of plans which will not be successful to accomplish mission.

7. Complete the plan.

- Complete the estimate and make final decision(s).
- Lay out plans in five-paragraph order.

D. Write the order and/or prepare sketch or terrain model, as necessary.

	<i>OPERATION ORDER</i>
1. Use the OPERATION ORDER to the right to assist you. 2. Include all necessary details: - Identify exactly what unit is to accomplish. - Estimate the time for preparation, beginning to end, until you are ready to GO. - Anticipate restrictions, be aware of special task(s) that apply to the unit. - Outline task(s) that must be done to get ready to GO. - Use Half Rule or Reverse Planning. 3. Develop best picture of the enemy. - Study all available reports/summaries. - Make notes on enemy's: — strength — weapons/equipment used — operational patterns - Develop strategy to destroy or suppress enemy.	1. SITUATION: This paragraph contains all available information concerning the enemy and friendly situations. a. Enemy forces: Any available information, such as strength, weaknesses, probable courses of action, weather, and terrain. b. Friendly forces: All available information concerning the missions of the next higher and adjacent forces. c. Attachments and detachments: Information concerning all units that have been attached to or detached from the platoon. 2. MISSION: A clear, concise statement of the task that must be accomplished by the platoon. It must answer the question of who, what, when, where, and why. 3. EXECUTION: Platoon scheme of maneuver contains the mission for each rifle squad and attached element (if any). This paragraph also contains special instructions that apply to a specific squad or to the platoon as a whole, and the plan for fire support. 4. SERVICE SUPPORT: Administrative details, to include ammunition and ration resupply, and casualty evacuation. 5. COMMAND AND SIGNALS communications instructions, to include visual signals, Challenge and Passwords, platoon leader's and company commander's location during the operation.

4. Study terrain and weather.

- Review every bit of ground in the operational area.
- Make record of facts about:
 - route
 - objective
 - sectors of fire
 - positioning of key weapons
 - movement techniques
- Study varying weather conditions and how they may affect mission requirements.

E. Orient subordinates.

1. Instruct team leaders to assemble patrol members at designated time and place so that details of the warning may be explained.
2. Ensure all requirements (maps, visuals, reports, etc.) are ready and available to assist in issuing the order.

F. Issue order to subordinates.

1. Ensure that all patrol members are assembled.
 - Issue order from vantage point that allows squad leaders to see the ground on which they are to operate.
2. Issue the order in standard format.
 - Accept and answer questions, as necessary.
 - Provide visual view, sketch or terrain model, as required.

G. Coordinate events with other units, as necessary.

- Identification of self and unit
- Time(s) of departure and return
- Area of the patrol's operation (if it is within the forward unit's area of operation)
- Terrain data
- Known or suspected enemy positions
- Likely enemy ambush sites
- Latest enemy activity
- Status of friendly positions
- Obstacle locations
- Fire plan
- Support the unit can furnish (fire support, litter teams, guides, communications, reaction units)
- Signals to be used upon reentry, and the procedure to be used by patrol and guide during departure and reentry
- Location(s) of detrucking point, initial rallying point, departure point, and reentry point

H. Supervise

NOTE: Check every detail of operation.

1. Review squad/team leaders' responsible area(s) to ensure correct preparation to meet mission requirements.
2. Check plans to ensure accurate requirements are ready for:
 - equipment
 - weapons
 - ammunition
 - rations
 - pyrotechnics

NOTE: Requirements will vary depending on mission.

RESOURCES:

FMFM 1-2, Marine Troop Leaders Guide
FMFM 6-4, Marine Rifle Company/Platoon
FM 7-11B1, Soldier's Manual, Infantryman, Skill Level 1
MCI Course 03.46c, The Marine Squad Leader
FMFM 6-5, Marine Rifle Squad
OH 6-6, Marine Rifle Squad

TASK: PLAN PATROLS (G-0311.14.3/CPL)

CONDITIONS: Conditions are determined by mission requirements. You will be given: a map, a mission, current INTSUMS and other tactical information deemed appropriate.

STANDARD: You will develop a tactically sound patrol. Men must be thoroughly briefed on the plan. You may use references for this task.

BATTLE DRILL(S): 1**PERFORMANCE STEPS:****A. Study the mission, the terrain (map or actual), and all other pertinent tactical information available.**

1. Ensure that the mission statement addresses: *who, what, when, where, why, how*.
2. If any one of the above in step 1 is not addressed, *ask questions*.
3. Review maps, aerial photos, reconnaissance reports, visual sightings for routes, sectors of fire, positioning of key weapons, and movement techniques.
 - *Terrain*, know every bit of ground; know how weather conditions affect terrain and how to prepare for varying weather conditions.
4. Use METT (mission, enemy, terrain, weather, and troops/fire support) in the analysis of the *situation*.

NOTE: Consider *all* METT standards; accomplish those necessary; order may vary.

B. Plan use of time.

NOTE: Time is of the utmost importance when planning for a patrol. The more time you have to plan and prepare, the greater the chance for maximum success. You should use what time you have to the best of your ability.

1. Use the "Reverse Planning Sequence" or "Backwards Planning".
2. Brief men on the patrol time schedule.
 - Tell the men when and where the order will be given.
 - Tell the men what uniform to wear.
 - Tell the men what equipment to bring.

NOTE: If rehearsals or inspections are to be conducted immediately after the order, this will reduce the time lost by having the men go back and get their equipment and change uniform.

PATROL TIME SCHEDULE

0200 -	- RETURN FRIENDLY AREA
2330 - 0200	- MOVEMENT EN ROUTE
2300 - 2330	- ACCOMPLISH MISSION, REORGANIZE
2230 - 2300	- LEADERS' RECON
2000 - 2230	- MOVEMENT EN ROUTE
2000 -	- DEPART FRIENDLY AREA
1945 - 2000	- MOVEMENT TO DEPARTURE AREA
1930 - 1945	- FINAL INSPECTION
1845 - 1930	- NIGHT REHEARSALS
1800 - 1845	- DAY REHEARSALS
1745 - 1800	- INSPECTION
1700 - 1745	- SUPPER MEAL
1515 - 1700	- SUBUNIT PLANNING AND PREPARATION
1445 - 1515	- ISSUE OPERATION ORDER
1400 - 1445	- COMPLETE DETAILED PLANS
1315 - 1400	- CONDUCT RECONNAISSANCE
1300 - 1315	- ISSUE WARNING ORDER

C. Make tentative plan.

1. Use KOCOA and METT to outline temporary plan of action.

NOTE: This tentative plan will lay the foundation for detailed planning later.

- Analyze the terrain.
- Study the strengths, locations, dispositions, and capabilities of friendly and enemy forces.

D. Organize the patrol.

1. Determine the elements and teams required to accomplish essential tasks.
2. Organize the patrol in the two-step process: General organization and special organization.
3. Select men, weapons, and equipment.
 - Make selections based on capabilities of personnel assigned.
 - Select weapons and equipment required to fulfill successful mission.

E. Issue warning order at earliest opportunity.

1. Issue order to ALL patrol members.
2. Brief men on key elements of Warning order: Situation, Mission, General Instructions, Specific Instructions
3. Use Warning Order Format in illustration to the right to assist you.
4. Issue specific instructions, as required.
 - Assign element/team leaders to special detail which may include:
 - Getting, checking and distributing weapons, ammunition, equipment, rations, and water;
 - Preparing their men for the MISSION and;
 - Coordinating, inspecting, rehearsing and reconnoitering.

F. Make a reconnaissance.

1. Study a map or make a sketch of the ground area you plan to survey.
2. If required to support the mission, make an aerial reconnaissance before completing plans.

NOTE: A visual reconnaissance provides information that cannot be obtained from a map.

3. Pick rallying points during the patrol or by a study of the map before the patrol.

NOTE: Rallying point(s) are tentative and will remain so until confirmed on the ground.

ORAL WARNING ORDER FORMAT**WARNING ORDER FORMAT****SITUATION****MISSION****GENERAL INSTRUCTIONS****Organization**

Uniform and equipment common to all

Weapons, ammunition, and equipment

Chain of command**Time schedule**

Time, place, uniform, and equipment for receiving the operation order

Times and places for inspections and rehearsals.

SPECIFIC INSTRUCTIONS

4. Confirm or change rallying points during reconnaissance.
5. Select places that are advantageous to the mission; ensure that they:

- are large enough for the patrol to assemble in;
- are easily recognized;
- have cover and concealment;
- are defensible for a short time;
- are away from normal routes of troop movement.

G. Complete detailed plan.

1. Assign essential tasks to be performed by elements/teams and troops.
2. Plan other phases of the patrol.
 - Assign tasks which will assist the patrol to reach the objective and return.
 - Perform navigation requirements.
 - Establish security during movement and halts.
 - Establish actions to be taken at danger areas, on enemy contact, and at stream crossings.
3. Determine times of departure and return.
 - Consider the amount of time needed to reach the objective.
 - Determine the distance, terrain, anticipated speed of movement, friendly and enemy situation, and the time at/or by which the mission **MUST** be accomplished.
 - Consider the time required to accomplish essential tasks in the objective area.
 - Include the leaders' reconnaissance and movement of elements and teams into position, as well as the accomplishment of the patrol's mission.
 - Consider the time required to return to a friendly area.
 - This may be difficult to determine because casualties, prisoners, or captured equipment may slow the patrol. The use of a different return route may change the time needed.
4. Select primary and alternate routes.
 - Use map and tentative plan notes to select and finalize route(s) to and from the objective.
 - Ensure that the route **TO** the objective is *DIFFERENT* than the route **FROM** the objective.
 - Use the alternate route when the patrol has made contact with the enemy on the primary route.
 - Use the alternate route when the patrol leader knows or suspects that the patrol has been detected.

H. Coordinate plan with adjacent/supporting units.

1. Coordinate closely with friendly forward units that the patrol will pass through by giving and receiving the following information:
 - Identification of self and unit
 - Time(s) of departure and return
 - Area of the patrol's operation (if it is within the forward unit's area of operation)
 - Terrain data
 - Known or suspected enemy positions
 - Likely enemy ambush sites
 - Latest enemy activity
 - Status of friendly positions
 - Obstacle locations
 - Fire plan
 - Support the unit can furnish (fire support, litter teams, guides, communications, reaction units)
 - Signals to be used upon reentry, and the procedure to be used by patrol and guide during departure and reentry.
 - Location(s) of detrucking point, initial rallying point, departure point, and reentry point
2. Exchange the following information with other patrol leaders who will be patrolling in the same or adjacent areas:
 - Identification of the patrol
 - Mission
 - Route
 - Fire plan
 - Signal plan
 - Planned times and points for departure and reentry
 - Any information that either patrol may have about the enemy

I. Issue patrol order.

1. Prepare/issue order to all patrol members.
2. Use the Patrol Order format to assist you.

PATROL ORDER

1. SITUATION (as it affects the patrol)
 - a. Enemy Forces. — Weather, terrain, identification, location, activity, strength.
 - b. Friendly Forces. — Mission of next higher unit, location and planned actions of units on right and left, fire support available for patrol, missions and routes of other patrols.
 - c. Attachments and detachments.
2. MISSION (what the patrol is going to accomplish and the location or area in which it is to be done)
3. EXECUTION
 - a. Concept of Operation.—The overall plan and missions of elements, teams, and individuals in the objective area.
 - b. Other missions, not in the objective area, for elements, teams, and individuals. Included are such tasks as navigation, security during movement and security at halts.

c. Coordinating Instructions

- | | |
|---|--|
| (1) Times of departure and return | (7) Rallying points and actions at rallying points |
| (2) Primary and alternate routes | |
| (3) Departure and reentry of friendly areas | (8) Actions in objective area |
| (4) Organization for movement | (9) Debriefing |
| (5) Actions at danger areas | (10) Other actions |
| (6) Actions on enemy contact. | (11) Rehearsals and inspections |

4. ADMINISTRATIVE AND LOGISTICS

- a. Rations
- b. Arms and ammunition
- c. Uniform and equipment (state which members will carry and use)
- d. Method of handling wounded and prisoners

5. COMMAND AND SIGNAL

a. Command

- (1) Chain of Command
- (2) Locations of leaders at various times—during movement, at danger areas at the objective

b. Signal

- (1) Signals to be used within the patrol
- (2) Communication with higher headquarters—radio call signs, primary and alternate frequencies, times to report, and special code to be used
- (3) Challenge and password

Format of a Patrol Order

3. Follow the outlined steps in the Patrol Order.

- Use terrain models, draw sketches, or use chalkboards to illustrate the plan.
- Allow patrol members to take notes.

NOTE: Hold questions until the order is completed.

- Provide specific instructions to special purpose teams and key men so they can get ready by doing such things as preparing explosives, checking radios, and making a map study.

J. Inspect and rehearse.

1. Inspect before rehearsals and after the final rehearsal.

- Rehearse by having the patrol leader WALK and TALK the entire patrol through each action.
- If patrol is to be at night, rehearse *both* during day and night.

2. Ensure that *ALL* equipment is still working and nothing is left behind.

3. Question men to ensure that each knows:

- the PLAN
- WHAT he is to do
- WHEN he is to do it
- WHAT others are to do
- CHALLENGES AND PASSWORDS, SIGNALS, CODES, RADIO CALL SIGNS, FREQUENCIES, and REPORTING TIMES

NOTE: Supervision and Coordination are CONTINUOUS throughout!!

RESOURCES:

FM 21-75, Combat Training of the Individual Soldier and Patrolling
FMFM 1-2, Marine Troop Leaders Guide
FMFM 6-4, Marine Rifle Company/Platoon
FMFM 6-5, Marine Rifle Squad
FM 7-8, The Infantry Platoon and Squad

TASK: ESTABLISH SECURITY POST (G-0311-14.4/CPL)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: general area or terrain feature on which to place a security post.

STANDARD: You will select and emplace a two-man security post which provides an excellent view of avenues of approach and is not easily observable. Primary and alternate means of communication must be clearly understood by Marines on the security post.

BATTLE DRILL(S): 27

PERFORMANCE STEPS:**A. Select tentative position.**

GENERAL Security post furnishes local security for platoons and companies. The platoon commander or company commander designates the general position to be occupied. Usually a security post consists of two to four men located up to 500 meters forward of the platoon position or as the terrain dictates. Small patrols are often used to cover ground between security posts or in lieu of security posts. As the enemy approaches, the security post members personnel give warnings and observe to determine enemy strength, actions, and routes of approach. They avoid combat and withdraw as the enemy closes.

NOTE:

-Select area that promotes success of the mission by ensuring that the area provides:

- Location from which you can observe the activities that occur within a particular area and provide early warning of enemy approach
- Maximum observation of surrounding area
- Cover and concealment
- Concealed routes to and from security posts

NOTE: -The best location for security posts is on or near the military crest of hill.

-Observation is the primary consideration whether or not the above conditions exist at a site.

B. Arrange for departure and re-entry of friendly lines.

NOTE: Determine:

- if guides will be used;
- what challenge and passwords will be used.

-Coordinate for passage through friendly lines and re-entry through friendly lines. Ensure the following is accomplished:

- Make quick reconnaissance of the exact point of departure and re-entry.
- Ascertain the exact entry and re-entry map coordinates for use by the patrol leader in planning the patrol route.
- Coordinate with personnel in company and platoon positions of the time and place of departure and return.

-Deploy an advance team of two to four members to coordinate a few hours before patrol's departure, if necessary.

-Communicate orally (by radio) with security posts forward of friendly lines.

C. Inspect for required equipment.

1. Check to ensure that the following equipment is operable:
 - Binoculars
 - Radios
 - Field phone and wire
 - Extra batteries
 - Night observation devices
 - Other required equipment depending on mission
2. Change or perform maintenance on any equipment not working properly.
3. Designate personnel who will perform maintenance on equipment.
4. Schedule shifts until all weapons and equipment are in good working order.
5. Maintain a certain percentage of security at *all times*, as determined by the leader.

D. Lead men to position tentatively selected.

1. Look over area selected to ensure its location is advantageous to the mission.
2. Confirm or change location to meet mission requirements.

E. Make final decision on location.

1. Communicate mission requirements.
2. Accept recommendations from team leaders.
3. Consider METT and KOCOA.

F. Brief men on conduct of security post.

1. Inform personnel going *to* and *from* security post that they **MUST** move carefully so their movement does not reveal the location to the enemy.
2. To support a successful mission, question men on assignment(s) to ensure each knows his area of responsibility.
3. Review the applicable items listed below on the conduct of security post:
 - Use of ONE point of entry and exit
 - Notify ALL members of any personnel entering and exiting security area
 - Maintenance of cover and concealment at all times
 - Knowledge of alternate routes of withdrawal from enemy fire
 - Maintenance of "watch" schedule in 30-minute intervals for each member of security post
 - Alertness (100 percent)

- Readiness of all gear for hasty movement if attacked
- Practice of movement and light discipline to avoid enemy's attention

G. Establish communication with the defensive position.

NOTE: Leader will determine primary and alternate method of communication.

1. Prepare telephone lines to be laid whenever possible, if required.
2. Set up radio gear and establish communications. Ensure that:
 - wire lines to the security post do not disclose location to enemy observers.
 - antennas are carefully positioned and concealed.
3. Orally review any mission requirements with subordinates.
4. Establish communications with unit position using a quick (quiet) signal.
5. Maintain CONTINUOUS COMMUNICATIONS with higher headquarters.

H. Return to defensive position and report to superior.

1. Withdraw on predetermined route to the FEBA.
2. Notify the platoon/company commander IMMEDIATELY after establishing the security post.
 - Report ALL information regarding the enemy (AS SOON AS IT IS KNOWN) to the commander who originally ordered the security element.
 - To report information, use S.A.L.U.T.E. format!!!

RESOURCES:

OH 6-6, Marine Rifle Squad
 FM 21-75, Combat Training of the Individual Soldier and Patrolling
 FMFM 6-4 and 6-5, Marine Rifle Company/Platoon, Marine Rifle Squad
 MCI 03.35b Infantry Patrolling
 MCI 03.46c The Marine Squad Leader
 Patrolling, USMC Div. Schools, Training Support Package, 27 May 81

TASK:CONTROL UNIT FIRES (G-0311-14.5/CPL)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a target of opportunity (pyrotechnics may or may not be made available).

STANDARD: You must maneuver unit to a point from which it can place effective fire on the target, control the fires and give a fire command and stop the firing.

BATTLE DRILL(S): 16

PERFORMANCE STEPS:**A. Select and occupy firing position.**

1. Pick the best firing positions for RIFLEMAN, AUTOMATIC RIFLEMAN and GRENADIER-RIFLEMEN.
2. Verify each man's ability to cover the assigned fire team sector of fire.

NOTE: - Ensure they are positioned to provide best cover for the fire team's sector of fire.
 - Ensure that they can provide mutual fire support for adjacent fire teams.
 - Ensure that they can participate in the delivery of FPF.

B. Give fire command (ADDRAC).

NOTE: - Alert, Direction, Description, Range, Assignment, Control

1. Point out terrain features that will aid in the success of the mission.
 - Take advantage of *KOCCOA* and *METT*.
2. Give oral command to *ALERT* men.

EXAMPLE: "SQUAD" OR "FIRE TEAM"

3. Tell which *DIRECTION* to look for the target.

EXAMPLE:	YOU SAY
	"RIGHT FRONT"
Tracer ammunition	"FRONT" "Watch my Tracer." (Fire 1st round.) "LEFT FLANK."

4. Give men a brief and accurate target *DESCRIPTION*.
 - Give as much detail as necessary about the target/object.

EXAMPLE:	YOU SAY
Reference points	"SQUAD." "FRONT." (or) "ROCK PILE IN DRAW." "SNIPER IN FIRST TREE TO THE RIGHT, ONE FIVE ZERO." "FIRST TEAM." "STONE HOUSE. RIGHT OF STONE HOUSE, SMALL SHED." "MACHINEGUN IN FIRST HAYSTACK RIGHT OF SHED, TWO FIVE ZERO."
Finger measurments	"SQUAD." "FRONT." "TALL TREE AT EDGE OF HEDGEROW, RIGHT TWO FINGERS." "MACHINEGUN, THREE HUNDRED."

5. Give the *RANGE* needed to set the sight or to adjust the point of aim.

NOTE: The word "*RANGE*" is not used.

EXAMPLES: "ONE-SEVEN-FIVE" or "TWO-FIVE-ONE" or "FOUR HUNDRED"

6. Give the target *ASSIGNMENT* which tells who is to fire on the target.

EXAMPLES: "GRENADIER; RAPID." OR "FIRST TEAM;
GRENADIER; ASSAULT RIFLEMEN; RAPID."

7. Issue the fire *CONTROL* command or signal to open fire.

NOTE: Standard arm-and-hand signals attached at end of this task.

EXAMPLE: "COMMENCE FIRING" or "ON MY SIGNAL" or "AT MY COMMAND . . ."

C. Give supplemental commands to control the fires, if necessary.

1. Give additional fire commands as required.

EXAMPLE:	YOU SAY
- To place heavy column of fire on recognized target:	"SQUAD." "FRONT." "TROOPS." "THREE HUNDRED." "AT MY SIGNAL."

EXAMPLE:	YOU SAY
- To designate target to his entire squad, only 2nd fire team to engage it, M203 fire on the target automatic rifleman to fire at the rapid rate:	"SQUAD." "RIGHT FRONT." "STONE HOUSE, RIGHT TWO FINGERS." "MACHINEGUN TWO-FIVE-ZERO."
- Subsequent fire commands are used to change an element of initial command or to cease fire:	"SQUAD." "FRONT." "TROOPS." "THREE HUNDRED." "SECOND TEAM." "COMMENCE FIRING." "SECOND TEAM: GRENADIER; RAPID." "COMMENCE FIRING."
- Wants entire squad to fire after giving the above command:	"GRENADIER; RAPID." "COMMENCE FIRING."
D. Stop the fires. 1. Give the cease fire command.	"CEASE FIRE." or "ON MY SIGNAL..." or the use of pyro-technics may or may not be used

STANDARD ARM-AND-HAND SIGNALS

RANGE -

extend the arm with fist closed toward the leader or men for whom the signal is intended. Open the fist exposing one finger for each 100 meters of range.



ENEMY IN SIGHT-

hold the rifle horizontally, with the stock in the shoulder, the muzzle pointing in the direction of the enemy.



STANDARD ARM-AND-HAND SIGNALS (CONT'D)**COMMENCE FIRING -**

extend the arm in front of the body, palm down, and move it through a wide horizontal arc several times.

**DOWN; TAKE COVER -**

extend arm sideward at an angle of 45° above horizontal, palm down, and lower it to side. Both arms may be used in giving this signal. Repeat until understood.

**CEASE FIRING -**

raise the hand in front of the forehead, palm to the front, and swing the hand and forearm up and down several times in front of the face.

**FIRE SLOWER -**

execute slowly the signal "COMMENCE FIRING." For machine-guns, a change to the next lower rate of fire is required.

**RESOURCES:**

FMFM 6-5, Marine Rifle Squad

OH 6-6, Marine Rifle Squad

MCI 03.70, The Marine Rifleman-Combat Skills

TASK: PREPARE RANGE CARD (M60 Machinegun) (G-0331-16.7/PVT)
(M2 Machinegun) (G-0332-17.9/LCPL)
(MK19 Machinegun) (G-0332-18.8/LCPL)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: appropriate machinegun (M2, M60, or MK19), compass, tripod and accessories, assistant gunner, paper, and pencil. A preprinted range card may be used, if available.

STANDARD: The range card must be prepared within 45 minutes for primary, alternate and supplementary positions. The sketch section must include the machinegun position, the PDF or FPL, sector limits, magnetic azimuth of gun and 6-digit coordinates, areas of grazing fire, deadspace, and specific targets. The sketch must show distance when applicable. The data section must list the specific targets by number and include direction (mils), elevation (mils), range (meters), as well as a description of the target, when appropriate. The range card will be prepared in duplicate, giving the gun number, unit description through the company level and the date of preparation.

BATTLE DRILL(S): 28, 30

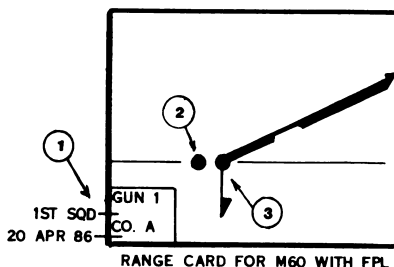
PERFORMANCE STEPS:

A. Complete sketch section.

1. Record the gun number, unit designation, and date on range card (1).

NOTE: Show no higher unit designation than the company for security reasons.

2. Draw the machinegun symbol in the lower center portion of the card (2).



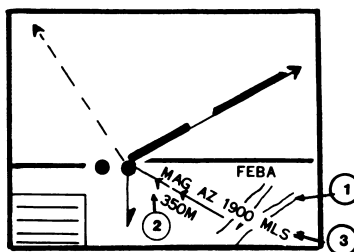
NOTE: -Draw the machinegun symbol in the direction of the FPL (final protective line) or the PDF (principal direction of fire), or the center of the sector, whichever is appropriate.

-Ensure the tripod is firmly emplaced once a PDF or FPL has been assigned.

3. Draw a magnetic north arrow through the gun position at the base of the machinegun symbol (3).
4. Orient the gun position with a prominent terrain feature that is recognizable on a map.

NOTE: If a prominent terrain feature is not available, the gun position may be oriented using a 6- or 8-digit grid coordinate.

- Sketch the prominent terrain feature on the card (1).
- Determine the magnetic azimuth to or from the terrain feature to the tripod-mounted gun position.
- Draw a line between these two points.
- Place arrow barbs along this line, pointing in the direction the magnetic azimuth was taken (2).
- Record the magnetic azimuth in mils and the distance in meters along this line (3).

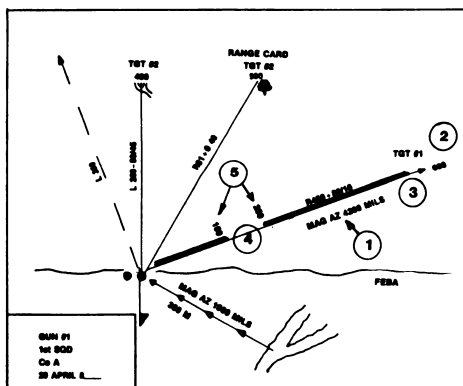


RANGE CARD WITH AN FPL

5. Draw in the right and left limits of sector.
6. Sketch in any terrain features that may appear on the limits of sector.

IF AN FPL IS ASSIGNED:

- Measure and record the magnetic azimuth of the FPL (1).
- Determine and record the maximum extent of grazing fire along the FPL (2).
 - Set the rear sight of the machine-gun at 600 meters.
 - Select a point on the ground estimated to be 600 meters from the gun.
 - Lay, fire and adjust on that point.
- Place a heavy solid line ending in an arrow to indicate the grazing fire along the inner side of the side of the line representing the FPL (3).
- Leave a gap in the heavy line to indicate deadspace (4).
- Record the ranges to the near and far ends of the deadspace (5).

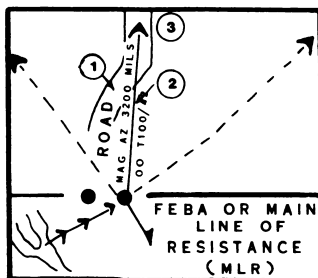


RANGE CARD WITH AN FPL

IF A PDF OR CENTER OF THE SECTOR IS ASSIGNED:

- Sketch the target associated with the PDF on the card (1).
- Measure and record the magnetic azimuth of the PDF on the drawing (2).
- Sketch the PDF on the drawing as the machinegun symbol extends across the drawing (solid line with arrow point) (3).

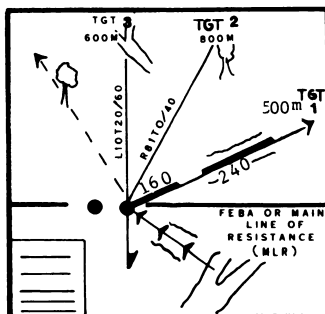
7. Label the FPL as target number (1).
(See figure in Step 6 on previous page).



RANGE CARD WITH PDF

8. Number all targets in sequence from the FPL.

NOTE: If an FPL has not been assigned, label targets sequentially from one target to the next (See figure titled "Range Card With FPL and Targets").



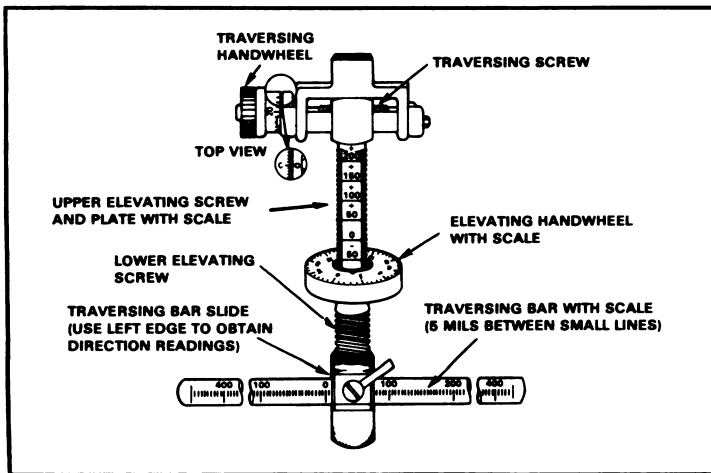
RANGE CARD WITH FPL & TARGETS

B. Lay on each probable target; read direction and elevation.

NOTE: Obtain both a direction and an elevation reading of one target before moving to the next target.

1. Center the traversing handwheel (see figure on next page).
 - Sketch in all targets (TCT) for which data is to be determined.
2. Obtain direction readings to targets other than the FPL using the traversing bar and elevating (T&E) mechanism on the tripod.

NOTE: The FPL normally needs no direction reading because, in laying the FPL, the traversing slide is positioned to the extreme right or left of the traversing bar.



- Loosen the traversing slide lock lever.
- Move the traversing slide along the traversing bar until the machinegun is laid on the center base of a point target and on either flank of a linear target.
- Lock the traversing slide to the traversing bar.
- Determine the traversing direction to the nearest mil using the traversing bar and handwheel.

NOTE: If the left edge of the traversing slide does not fall exactly on a 5-mil graduation (tickmark), use the nearest graduation as the direction reading.

- Read the direction as **RIGHT** (number of mils) when the traversing slide is to the **LEFT** of the “0” on the traversing bar.
 - Read the direction as **LEFT** (number of mils) when the traversing slide is to the **RIGHT** of the “0” on the traversing bar.
- **Subtract** the traversing bar and handwheel numbers if the mil is below “0”.
 - **Add** the traversing bar and handwheel numbers if the mil is above “0”.
3. Obtain elevation readings of each target.
- Lay the gun at the center base of the target.

- Determine the **MAJOR READING** using the upper elevating screw and plate with scale ①.

- Gunner lowers his head until his eyes are level with the top of the elevating handwheel.

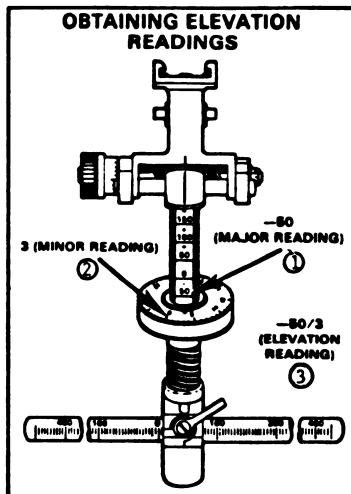
- Gunner records the first number above the first visible index line above the elevating handwheel on the target line.

NOTE: Make sure to designate the major reading as either a PLUS (+) or MINUS (-) sign.

- Determine the **MINOR READING** using the mil scale on top of the elevating handwheel ②.

- Record the number that is on line with the dial pointer.

NOTE: Record the minor reading next to the major reading on the card. Separate the two numbers with a slash (/). See ③ in the figure on previous page.



C. Complete the data section.

NOTE: If using a preprinted range card, fill in the Data Section of the card. If you are NOT using a preprinted range card, record the firing data on the card as it is obtained.

D. Make a duplicate card for the platoon commander.

1. Prepare another card containing the same information.
2. Keep one card at the gun position.
3. Send the duplicate card to the company headquarters.

RESOURCES:

FM 23-67, Machinegun
 MCI Course, 03.20k, M60 Machinegun
 FM 23-64, Browning Machinegun
 OH 6-9, Machineguns and Machinegun Gunner

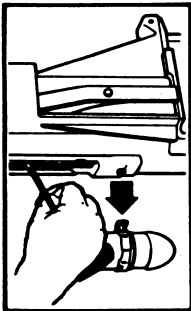
TASK: ENGAGE TARGET WITH MK19 MACHINEGUN (G-0332-18.9/LCPL)

CONDITIONS: Conditions are determined by mission requirements. You, as a gunner, are provided: zeroed MK19 machinegun; six stationary point and area targets out to 1500 meters; three moving targets between 700-1100 meters, which can be engaged frontally, laterally, and obliquely; and 63 rounds of 40mm TP ammunition.

STANDARD: You will be able to place effective fire on stationary targets within six rounds per target and on moving targets within nine rounds per target.

BATTLE DRILL(S): 16**PERFORMANCE STEPS:****A. Clear weapon.****IF:****AND:****THEN:**

Loaded



1. Remove live round or spent case from bolt.
 - Ensure that bolt is to the rear. If not, move it to this position.
 - Insert tip of your .50 cal. cleaning rod through the right-hand receiver rail, as close to the bolt face as possible.
 - Push down on live round or case. Force it off bolt face and out bottom of gun.

WARNING: Don't use a bayonet to remove live round. Catch the live round as it falls out.

- Turn in live rounds as required by current directives.

Linked rounds in feeder

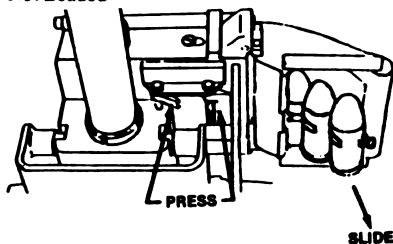
2. Remove linked rounds from feeder.
 - Open top cover.
 - Look for linked rounds in feeder.
 - With one hand, reach beneath the feeder. Press the primary and secondary positioning pawls.
 - At the same time, slide the linked rounds out of the feeder and out of the feed throat.
 - Return linked rounds to ammo can.
 - Follow steps for Not Loaded.

NO Linked rounds in feeder

- Follow steps for Not Loaded.

IF:

Not Loaded

**THEN:**

1. Open the cover
2. Reach beneath the feeder and press the primary and secondary positioning pawls. At the same time, slide the linked rounds out of the feeder and feed tray.
3. Remove linked rounds from feeder, if necessary.
4. Visually inspect receiver and chamber for ammunition.

B. Load weapon.

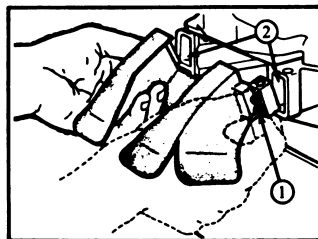
NOTE: - Make sure your weapon works before you load. Check it out using function check procedure.
 - Open top cover and inspect interior of receiver for missing or damaged parts.
 - Check feed slide assembly and feeder for defects or damage.
 - Check chamber for carbon rings.

1. Attach feed throat to the feeder.

- Squeeze the spring-loaded pins to feed throat ①.
- Insert into slots ② (see figure at right) on both sides of the feeder.

NOTE: Feed your weapon **ONLY** authorized ammo. Make sure it's dry, undented, and linked firmly.

2. Select and insert cans and brackets, depending on the mount.

**IF:**

Using a ground tripod mount

THEN :

Feed the ammo directly from the can.

Using a vehicle mount

Refer to MK64 MOD 4 Technical Manual to attach ammo can bracket and can, if available.

3. Use caution while feeding the machine.

- Bolt should be forward.

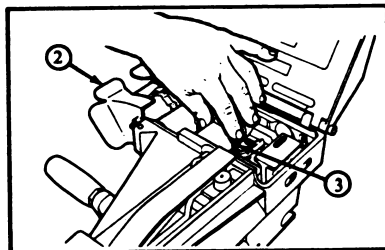
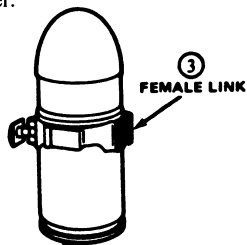
- Take off SAFE and ease charger handles forward.

CAUTION: Don't let top cover slam shut from open position.

- With COVER OPEN, insert first round through feed throat ② (see visual below on right)
- Insert first round into feeder, female link ③ (see visual below on left) first.
 - Push-slide round across the first pawl.

NOTE: Don't roll the round.

- Ensure that rounds are straight and firmly seated against the side of the bolt.
- Move feed slide assembly to the left.
 - Close top cover.



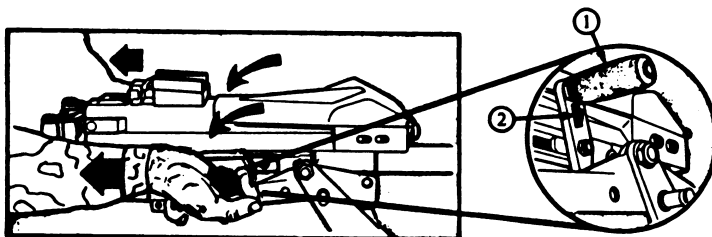
CAUTION: Point weapon downrange.

4. Pull bolt to the rear.

- Grasp charger handles ① (see visual below).

NOTE: The preferred method is palms-up, as shown in the figure.

- Press charger handle locks ② (see visual below) and rotate the handles down.
- Pull chargers to the rear.
- Push the chargers forward again.
- Rotate handles up.



5. Load first round.

- Place safety in FIRE position.
- Press the trigger.

NOTE: The bolt will spring forward. The first round is now loaded on the bolt face.

- Pull the chargers to the rear.

NOTE: This pulls the bolt with the loaded round into position for firing.

- Push the charger handles back to forward position.

- Rotate charger handles up.

NOTE: For firing, charger handles must be forward and UP. Put safety on until ready to fire. If machinegun components do not function properly, refer to Take Immediate Action (MK19 Machinegun) G-0331-18.11.

C. Fire the familiarization course.

- According to unit SOP.

D. Clear weapon.

- Refer to step A.

RESOURCES:

OH-6-9, Machineguns and Machinegun Gunnery
TM 08521A-10/1, Machinegun 40mm, MK19 MOD 3

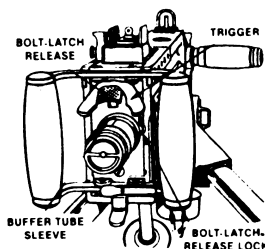
TASK: ENGAGE TARGET WITH M2 MACHINEGUN (G-0332-17.10/LCPL)**TRAINING OBJECTIVE 1****BEHAVIOR: Fire the M2 machinegun for familiarization.****CONDITIONS:** Conditions are determined by mission requirements. You, acting as gunner, are provided: M2 machinegun, 1000 meter field firing range with 5 targets and 56 rounds of linked ammunition.**STANDARD:** You must demonstrate how to put the M2 machinegun into operation by firing at selected targets.**BATTLE DRILL(S): 16****PERFORMANCE STEPS:****A. Clear weapon.**

- Place gun in the single shot mode. The bolt latch release must be in the *up* position.
 - To rotate the bolt latch release lock in the side position, rotate buffer tube sleeve to the *right*. (See visual A.)
 - Push the bolt latch release to the up position.
- Raise the cover group. (See visual B.)
 - Rotate cover latch forward.
 - Lift cover group all the way *up*.
 - With cover group up, remove any ammunition or loose links.
- Pull retracting slide handle to the rear. Make sure bolt locks to the rear.
- Inspect the inside of the receiver and chamber. (See visual C.)
 - Insert a clearing "T" block and run a cleaning rod down the barrel from the muzzle end until the tip of the rod can be seen in the receiver. Ensure you have a completely safe weapon.

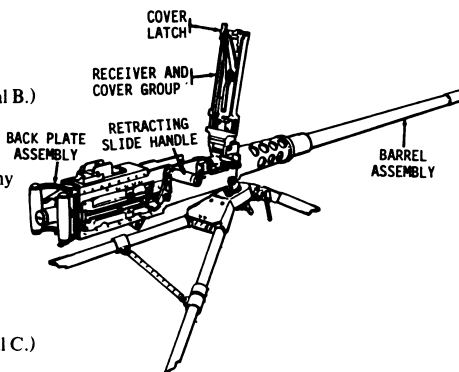
NOTE: At night use flashlight and inspect for rounds and links.

- Feel for rounds and links during combat and tactical training.

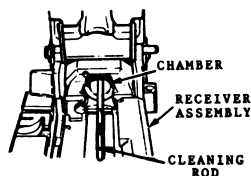
CAUTION: Do not let the bolt close on your hand.



Visual A



Visual B



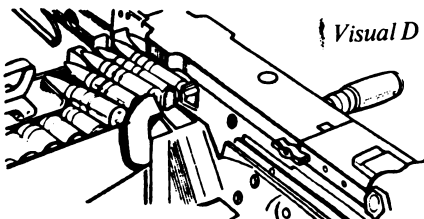
Visual C

5. Press the bolt latch release and ride the bolt forward.

CAUTION: Never close the cover with bolt to the rear.

B. Load weapon.

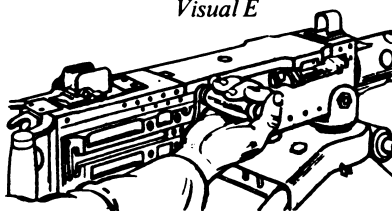
1. Ensure bolt is forward and the cover closed. (See visual D.)
2. Insert the double loop end of the ammunition belt in the feedway until the first round is engaged by the belt holding pawl.
3. Grasp the retracting slide handle with the right hand, palm up.
4. Vigorously jerk the bolt to the rear of the gun. (See visual E.)



Visual D

NOTE: If bolt handle release is *up*, return the retracting slide handle to the forward position. Then release the bolt.

5. Jerk the retracting slide handle *again* and release it.



Visual E

C. Fire the familiarization course.

- According to unit SOP.

TASK: ENGAGE TARGET WITH M2 MACHINEGUN (G-0332-17.10/SSGT)

TRAINING OBJECTIVE 2

BEHAVIOR: Qualify with the M2 Machinegun.

CONDITIONS: Conditions are determined by mission requirements. You are provided: M2 machinegun, scorecard, targets and 342 rounds of linked ammunition.

STANDARD: Obtain the minimum qualification scores on the 10-meter and transition ranges.

BATTLE DRILL(S): 16

PERFORMANCE STEPS:

A. Clear weapon.

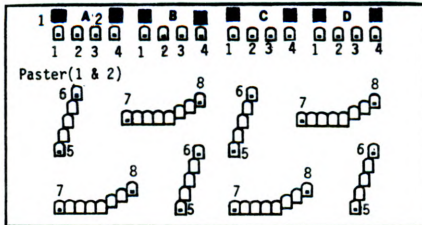
- Reference ENGAGE TARGET WITH M2 MACHINEGUN (G-0331-17.10), Step A

B. Load weapon.

- See ENGAGE TARGET WITH M2 MACHINEGUN (G-0331-17.10), Step B

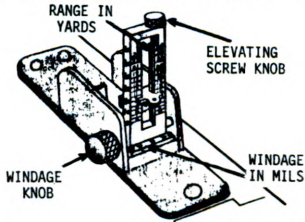
C. Zero machinegun.

1. Align the sights on the 10 meter target used for instruction and record firing. (See visual below)

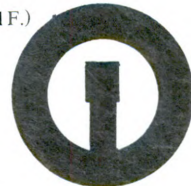


NOTE: Regulation Rifle Range Pastors will be attached to Standard Qualification Target.

2. Flip the leaf sight up and set it at 1,000 yards. Set windage at zero. (See visual below)



3. Align the sights on paster 1 of group A on the 10 meter target. (See visual F.)



Visual F

4. Fire three single-shot rounds. Use the same sight picture for each shot. (See visual G.)



Visual G

5. Locate, by inspection, the center of impact of the shots. (See visual H.)



Visual H

- If the center of impact is not on the paster, ensure that the gun is laid on the original paster.
 - Without moving the gun, adjust the sight first for windage, then for range, until the line of aim is on the center of impact.
- Confirm the adjustment by aiming at paster 2 and firing three more single shot rounds.
- If the center of impact is still not on the paster, again adjust the sight for windage and range until the center of impact coincides with the point of aim.

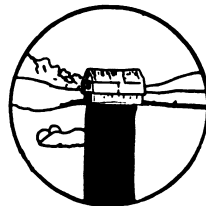
6. Record the sight settings.

D. Fire the familiarization course.

- According to unit SOP.

E. Field zeroing

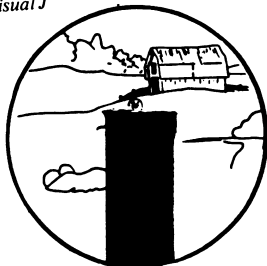
1. Adjust the elevating screw knob until the range setting is at 600 yards. (See visual under C (Zero machinegun), Step 2.
2. Set the windage adjustment at zero.
3. Sight in on the target with a good picture (See visual I.)



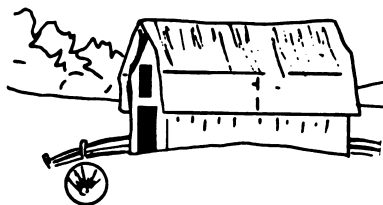
Visual I

4. Fire one single-shot round, and observe the strike of the round.
 - a. If the strike of the round is not on the target, check sight setting and sight picture. (See visual J.)
 - b. Fire a confirming round.
 - c. If the strike of the round is not on the target, ensure that the gun is relaid on the target.
 - d. Without moving the gun, adjust the sight first for windage then for range until the point of aim is on the strike of the round. (See visual K.)

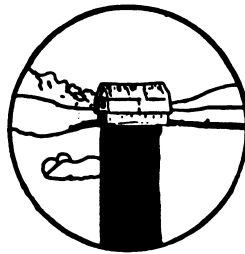
Visual J



Visual K



- e. Adjust the gun to bring the sights back onto the target. (See visual L.)



Visual L

- f. Fire another single-shot round.
- g. If the strike of the round is still not on the target, *repeat steps d through f* until the strike of the round coincides with the point of aim.
- Record the sight settings.

Range (meters)	Time (seconds)	Total rounds	Target	Type of fire
400 to 1,000	No Limit	6	Double E-silhouette	Targeting (singleshot).
400 to 1,000	180	60	Double E-silhouette (S) (400 to 1,000)	Free gun (two 6-round bursts per target).

F. Fire the transition range for qualification. (If available)

- According to unit SOP.

G. Clear weapon.

- See ENGAGE TARGET WITH M2 MACHINEGUN (G-0331-17.10), *Step A*.

RESOURCES:

MCI Course 03.68, Heavy Machinegun Crewman
 TM 9-1005-231-10, Machinegun, Caliber .50, Fized M85 (1005-00-690-2790)
 TC 23-65-1 Browning Machinegun Caliber .50 Heavy Barrel, M2
 FM 23-63 Browning Machinegun Caliber .50 HB, M2

**TASK: MAINTAIN NIGHT VISION SIGHT (M2) (G-0332-17.13/PVT)
(MK19) (G-0332-18.12/PVT)**

CONDITIONS: Conditions are determined by mission requirements. You will be provided: an AN/TVS-5 night vision sight, a lens brush, lens tissue, a lint-free cloth, and water.

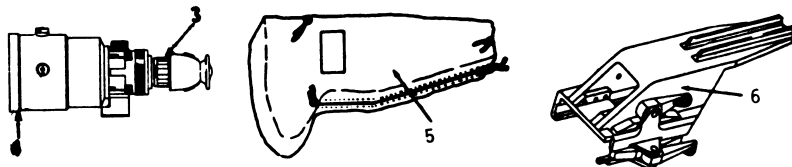
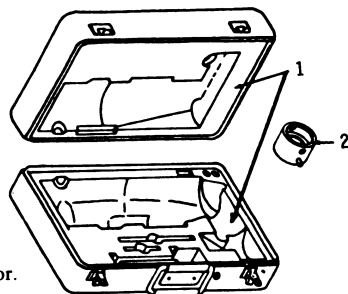
STANDARD: Clean the AN/TVS-5 using proper equipment, substances, and cleaning techniques. The performance for preventive maintenance checks and services and troubleshooting must be accomplished sequentially. The sight must pass inspection.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:

A. Inspect external components for serviceability.

1. Inspect the carrying and storage case.
2. Inspect the reticle cell assembly M2, M85.
3. Inspect the night vision sight.
4. Inspect the daylight cover.
5. Inspect the carrying bag.
6. Inspect the mounting bracket.
7. Return damaged part(s) to your immediate supervisor.



B. Clean night vision sight kit.

1. Clean all lenses (objective lens, eyepiece lens, daylight lens).
 - Remove loose dirt with a lens brush.
 - Clean the glass surfaces of lenses with lens tissue.
 - Saturate the lens tissue with water (distilled, if available) to remove dirt that is caked on the surface.
 - Dry and polish lenses with a dry lens tissue.
2. Clean exposed metal surfaces.
 - Clean with a lint-free cloth.
 - Dampen lint-free cloth with water, if necessary.
 - Allow surfaces to dry thoroughly before storing the sight.

3. Clean eyeguard.

- Clean the rubber eyeguard with a wet cloth.

4. Clean the carrying bag.

- Shake out loose dirt or foreign matter.
- Wipe the inside and outside of the bag with a damp cloth.

5. Clean carrying and storage case.

- Shake out loose dirt or foreign matter.
- Clean the exterior of the case with a clean cloth (dampened with water, if necessary).
- Wipe the interior cushions with a clean cloth (do NOT dampen the cloth unless absolutely necessary).
- Allow the interior to dry thoroughly before storing the sight and closing the case.

C. *Perform preventive maintenance checks and services (PMCS) before operation.*

1. Check the night vision sight kit.

- Check for completeness; items include the following:
(Numbers in parenthesis indicate quantity of item)

- Night vision sight (1)
- Battery (2)
- Brush, lens dusting (1)
- Key, socket head screw (1)
- Technical manual (1)
- Bag, carrying (1)
- Case, carrying and storage (1)
- Daylight cover (1)

- Check for dirt and moisture on external surfaces and parts.
- Clean and dry with lint-free cloth.

2. Check batteries.

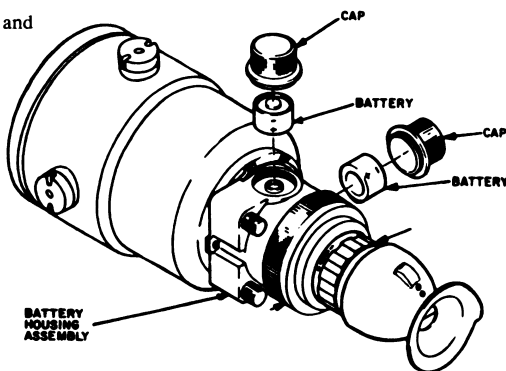
- Remove batteries.
- Check for corrosion on terminals and dirt or moisture in battery cap.
- Clean battery cap with dry cloth.
- Replace batteries if corroded.

3. Check temperature adapter (if present).

- Check for cracks in cable.
- Check for corroded connectors.
- Report deficiencies to your immediate supervisor.

4. Check daylight cover.

- Check for dirt or cracks in cover or broken lenses.
- Rotate holder to be sure that all apertures can be used.



5. Check contacts.

- Check each knob, switch, and control for smooth mechanical action.
- Report any binding or sticking of controls to your immediate supervisor.

D. Perform preventive maintenance checks and services (PMCS) during operation.

1. Check on-off/tube brightness (1) (see figure below).

- Install batteries.
- Turn switch to ON position.

NOTE: Intensifier tube should glow green. If it does not, report deficiency to your immediate supervisor.

- Rotate switch.

NOTE: Color intensity should change as switch is rotated. If it does not, report deficiency to your immediate supervisor.

2. Check on-off/reticle brightness control (2) (see figure below).

- Turn switch to ON position.
- Rotate control.
- Check for change in reticle intensity.
- Report deficiency to your immediate supervisor.

CAUTION: Excessive reticle brightness may damage the image intensifier tubes.

3. Check diopter focus ring (3)

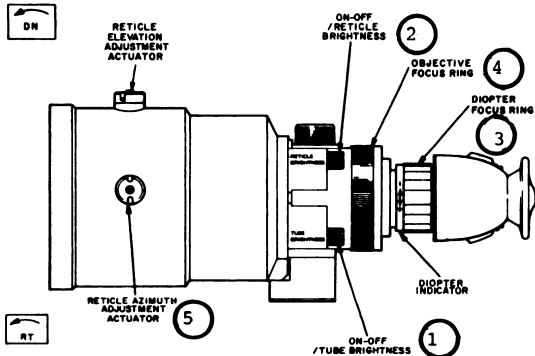
- Check for smooth movement.
- Adjust for sharp image of reticle.
- Report deficiencies to your immediate supervisor.

4. Check objective focus ring (4)

- Check for smooth movement.
- Adjust for sharper image.
- Report deficiencies to your immediate supervisor.

5. Check reticle azimuth adjustment knob (5)

- Rotate knob. Reticle should move in elevation.
- Return knob to original position.
- Report any deficiencies to your immediate supervisor.



E. Perform preventive maintenance checks and services (PMCS) after operation.**1. Remove batteries.**

- Remove battery caps.
- Remove batteries after operation.
 - Place batteries in storage case or bag.
- Replace battery caps.

F. Troubleshoot night vision sight.

NOTE: If a malfunction is not listed (except when malfunction and cause are obvious), or is not corrected by listed corrective actions, notify your immediate supervisor.

<i>IF:</i>	<i>THEN:</i>
<i>Weak or no illumination of image intensifier tube</i>	1. Check to see if ON/OFF TUBE is turned off or turned down. - Turn control on if turned off. - Adjust control until tube is illuminated if control is turned down. 2. Check to see if batteries are weak. - Replace batteries and recheck illumination tube.
<i>Blurred image</i>	1. Check to see if eyepiece lens is out of focus. - Adjust diopter focus ring until reticle pattern is sharply defined. 2. Check to see if objective lens is out of focus. - Adjust objective focus ring until image is sharply defined.

<i>IF:</i>	<i>THEN:</i>
<i>No visible reticle pattern or intensity is too low</i>	1. Check to see if reticle intensity is turned down or off. - Turn control on if control is turned off. - Adjust control until reticle is clearly visible if control is turned down. 2. Check to see if batteries are weak. - Replace batteries and recheck reticle visibility.
<i>Image intensifier tube illuminated but no image or reticle pattern.</i>	1. Indicates tube failure. - Report failure to your immediate supervisor.

RESOURCE:

TM 11-5855-214-10, Operator's Manual for Night Vision Sight, Crew Served Weapon AN/TVS-5, w/ch 1, 2, and 3

**TASK: TAKE IMMEDIATE ACTION (MK19 MACHINEGUN)
(G-0331-18.11/LCPL)**

CONDITIONS: Conditions are determined by mission requirements. You will, acting as the gunner, be provided: MK19 machinegun, a ten-round belt of dummy ammunition, and an a-gunner to catch the round when the bolt is pulled to the rear.

STANDARD: You must demonstrate the procedures which would successfully clear a misfire or identify the problem if the misfire cannot be cleared. The training steps must be performed sequentially.

BATTLE DRILL(S): 16

PERFORMANCE STEPS:

If weapon fails to fire or stops firing:

A. Pull bolt to rear (a-gunner catches round).

1. Grasp charging handle with palms up.
2. Press charging handle lock.
3. Rotate charging handle down.
4. Pull charging handle to the rear.
5. Check for ejection and feeding of belt.

B. Push charging handles forward and up.

C. Attempt to fire.

1. Repeat the above steps again.

NOTE: If machinegun still fails to fire, wait 10 seconds; a hangfire may cook off.

2. If round does not fire after second attempt, follow steps D-F found below.

D. Put gun on safe.

E. Pull bolt to rear.

Catch the live round as it is ejected.

F. Examine the primer of the round.

If gun will not shoot, check for:

1. Bad ammunition.

IF	DO THE FOLLOWING:
- Primer indented but round did not fire - Primer not indented - Round on bolt face 2. Jammed ammunition in feeder.	Dispose of round (ammunition bad). Replace firing pin. 1. Take off safety. 2. Relay. 3. Fire the round. NOTE: Bolt should be to rear, gun on SAFE.
- Rounds crooked or not seated firmly - Links not aligned in link guide - Male link first 3. Short recoil.	1. Straighten the rounds 2. Seat rounds firmly in feeder, snug against round positioning block. Position the links so they are seated in the link guide. Replace with female link first
- A spent case partially jammed in chamber	1. Clear feeder of ammunition. 2. Pry out partially jammed case using a cleaning rod. WARNING: DO NOT STICK THE CLEANING ROD THROUGH THE MUZZLE.
- A live round in the barrel and the extractor did not extract it	1. Put gun on SAFE. 2. Call Range Safety Officer (if in a training situation); or 3. Evacuate gun to EOD (Explosive Ordinance Disposal personnel) WARNING: DO NOT ATTEMPT TO REMOVE A LIVE ROUND FROM THE BARREL.
- Carbon buildup in the chamber - Receiver rails dry or obstructed - Dirty gun	Clean the bore and chamber. See step F 7, Bolt dropping round before firing. 1. Field strip 2. Clean 3. Inspect 4. Lube

IF**DO THE FOLLOWING:**

- Loose, broken, or burred feeder or feed slide assembly parts
- Loose, broken, or burred recoil springs or rods

See step F 5,
Defective feeder
or feed slide

1. Pull out bolt and backplate assembly until it "clicks."
2. Push against springs to test for weakness. (Note if rods are bent.)
3. Report weak springs or bent rods to your armorer.

4. Bad firing pin.

- Primer not indented on firing pin
- Firing pin tip failing to spring forward
- Dirty firing pin
- Firing pin chipped or broken

1. Clear all ammunition.
2. Charge the bolt to the rear.
3. Fire.

Report the defect to your armorer.

Clean and lube bolt face.

Report defects to your armorer.

5. Defective feeder or feed slide.

NOTE: Clear feeder of ammunition make sure gun is on **SAFE**.

- Weak or broken pawls
- Binding feed slide assembly
- Badly worn link guide

Report defects to your armorer.

1. Remove feed slide assembly and tray.
2. Clean.
3. Inspect.
4. Lube.

Report defects to your armorer.

6. Round not picking up bolt.

- Spent case partially jammed in chamber
- Dirt-clogged, weak, or damaged extractors
- Link too tight on round

Remove jammed case.

1. Scrape out dirt, especially on the sides of extractors.
2. Clean.
3. Lube.

1. Remove round with tight link.
2. Report defects to your armorer.

IF**DO THE FOLLOWING:****7. Bolt dropping round before firing.**

- Weak or damaged bolt fingers or extractors

Report defects to your armorer.

8. Binding in the rails.

- Binding in the rails

NOTE: Test by pulling to the rear. Ease it forward (hold onto one charging handle while you press the trigger).

1. Remove chargers.
2. Inspect receiver rails for dirt or burrs.
3. Clean and lube rails.
4. Report burrs or bent rails to your armorer.

9. Bad cocking lever.

- Wear or damage to cocking lever (left side of bolt)

1. Remove bolt and backplate assembly.
2. Report defects to your armorer.

CAUTION: REASSEMBLE BOLT AND BACKPLATE WITH COCKING LEVER IN FORWARD POSITION.

RESOURCES:

TM 08521A-10/1, Operator's Manual and Components List: Machinegun 40mm, MK19
MOD 3, June 1983

TASK: SELECT 60mm MORTAR POSITION (G-0341-19.6/SGT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a map, compass, binoculars, and field radio.

STANDARD: The section leader must select a position that provides cover and concealment and affords proper drainage and adequate resupply routes. The position must allow for mask and overhead clearance and dispersion between squads. It must also facilitate rapid displacement. It should be defilade.

BATTLE DRILL(S): 28**Performance steps:****A. Conduct reconnaissance.**

1. Study the map and determine the direction of fire.
2. Plan the primary and alternate routes.
3. Select members for the reconnaissance party and security party.
4. Get needed equipment.
5. Make reconnaissance.
6. Move to the initial firing position with the reconnaissance party.
7. Post security around the position and check it for mines and nuclear, biological, and chemical contamination.
8. Pick positions for the mortars and fire direction center (FDC).

B. Determine initial direction of fire.

Select one of the following methods to determine initial direction of fire.

1. *Map method*

NOTE: This method is used when sector of fire is not visible from the mortar position.

- Orient the map with the compass.
- Locate the mortar position and target position on the map.
- Draw a line between the mortar and the target (MT) line.
- Place the line of sight of the compass along the MT line drawn on the map.

2. *Compass direction or "direct alignment" method*

NOTE: This method is used when the sector of fire is not visible from the mortar position but can be viewed from the forward position.

- Place yourself on or as near to on the MT line as possible.

NOTE: To help establish the MT line, select a landmark at or near the mortar position before moving to the observation point.

- Read the magnetic direction in mils to the target or center of the sector of fire.

NOTE: The mortar will be mounted on the spot marked by the baseplate stake and laid in the direction established by the direction stake.

3. *Direct laying method*

NOTE: This method is used where no defilade is available or where speed in destroying a target is more essential than cover.

- Point out the target and direct that the mortar be mounted immediately without aiming posts. (This position is usually temporary and is evacuated as soon as target is destroyed.)

C. *Select primary position.*

Consider the following when selecting a *primary* position:

- Make certain the mortar can be mounted in defilade, if possible.
- Make certain the position provides cover and concealment and affords proper drainage and covered routes for occupation and resupply.
- Make certain there is sufficient space for dispersing the weapons; the width of dispersion between mortars should be approximately 35 meters.
- Make a quick visual check for mask clearance and overhead interference, ensuring that a round will NOT strike any obstruction.

NOTE: After the mortar is mounted, you can make a more thorough check to determine mask and overhead clearance by sighting along the length of the barrel with your eye placed near the base plug.

- The position must be able to be afforded close-in protection by rifle units.
- Make certain there is availability and accessibility of alternate positions.

D. *Select alternate and supplementary positions, as required.*

1. Consider the following when selecting *alternate* positions.

- Any position from which the same mission can be fired
- Positions should be sufficiently removed from primary position to minimize effects of enemy fire directed at primary position
- Routes from primary to alternate positions and from alternate to supplementary positions that should be in defilade and afford security in route

2. Consider the following conditions for *supplementary* positions.

- Use only when it is anticipated that a mortar unit may be required to fire a mission in addition to or in lieu of its primary mission and it cannot fire it from the primary position.
- Routes from primary and alternate positions should be in defilade and provide security.

RESOURCES:

FMFM 6-4, Marine Rifle Company/Platoon
 FM 23-36, 60mm Mortar, M224
 MCI Course 03.23g, The M224, 60mm Mortar Crewman

TASK: ISSUE 60mm MORTAR FIRE COMMANDS (G-0341-19.7/SGT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: mortar section, firing tables, M19 plotting board, and target of opportunity.

STANDARD: The fire command must be issued within 2 minutes. The initial fire command must include all elements. The subsequent fire command must always include range. Elements of 'A' must be performed sequentially.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:

After you have:

- Estimated range from mortar to target,
- Determined charge and elevation using firing table, and
- Determined type of round and fuze setting from target description, then

Formulate the initial fire command.

- Give orally whenever practical; if not practical, use telephone, radio, or arm-and-hand signals.
- Announce each command as rapidly as each element of the command is determined.

A. Issue initial fire command.

NOTE: This command must follow a definite sequence of transmission.

1. Indicate mortar(s) to follow.

- Alert the mortar crews and designate the mortars which are to follow.

EXAMPLE

"SECTION"

EXPLANATION

All 3 mortars are operating as a unit and are to follow the commands

"NUMBER ONE"

1 mortar is desired

2. Indicate type of ammunition.

- Specify the type of ammunition to be used.

EXAMPLE

"HE"

"WP"

"ILLUM"

EXPLANATION

High explosives

Smoke

Illumination

3. Indicate the mortars that are to fire.

- Designate the specific mortar(s) to fire.

EXAMPLE

“SECTION”
“NUMBER ONE (TWO)”

EXPLANATION

Fire all mortars
Fire a single mortar

4. Indicate the method-of-fire.

- Designate the number of rounds and manipulation to cover the target.

EXAMPLE

“ONE ROUND”
“THREE ROUNDS”
“TRAVERSE RIGHT (LEFT) THREE TURNS”
“SEARCH EIGHT HUNDRED-SEVEN”
“RIGHT (LEFT) ONE ROUND”

EXPLANATION

Number of rounds
Number of rounds
Manipulation to cover target
Manipulation to cover target
Number of round(s) and
manipulation to cover target;
mortars fire from right to left
(left to right)

NOTE: If no time is designated, it is understood that the interval between rounds will be 5 seconds.

5. Indicate deflection.

- To compute deflection use M19 plotting board.

EXAMPLE

“DEFLECTION 3360”
“DEFLECTION 2980”

6. Indicate charge.

- Obtain charge from firing tables based on range.
- Use lowest charge that will make range and clear mast.

EXAMPLE

“CHARGE 1”
“CHARGE 2”
“CHARGE 3”
“CHARGE 4”

7. Indicate time setting.

NOTE: M734 fuze is the only fuze that contains a time setting; all other fuzes do *NOT* contain this time setting.

EXAMPLE

“TIME PROXIMITY”
“TIME NEAR SURFACE”
“TIME IMPACT”
“TIME DELAY”

EXPLANATION

Burst height 3-13 ft. above
ground
“ ” 0-3 ft “ ”
Impact burst
Delay .050 second

8. Indicate elevation.

- Obtain from firing tables based on range.

EXAMPLE

“ELEVATION 1670”

**EXAMPLE OF COMPLETE INITIAL
FIRE COMMAND****ELEMENT**

For a single mortar:

“NUMBER ONE”

Mortars to follow commands

“HE”

Type of ammunition

“MORTARS TO FIRE, NUMBER ONE”

Mortars to fire

“ONE ROUND”

Method of fire

“DEFLECTION THREE ONE FIVE ZERO”

Deflection

“CHG 2”

Charge

“ELEVATION 1230”

Elevation

B. Command to fire.

“FIRE.”

C. Issue subsequent fire command.

- Include only those elements that have changed from the initial fire command.

NOTE: Elevation is always announced.

D. Announce “end of mission”.**RESOURCES:**

FM 23-36, 60mm Mortar M224

FM 23-90, 81mm Mortar

MCI Course 03.23, The M224 60mm Mortar Crewman

TASK: LAY 60mm MORTAR SECTION PARALLEL (G-0341-19.11/SGT)

CONDITIONS: Conditions are determined by mission requirements. You will, acting as section leader, be provided: 60mm mortar section and lensatic compass.

STANDARD: Mortars must be positioned on a 75-meter front, with 35-40 meters between guns. Guns must be numbered right to left, facing in the direction of fire. You must demonstrate proficiency in both methods of laying the mortar utilizing the members of the mortar section. The training steps must be performed sequentially.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:**A. Use compass method.**

NOTE: Use this method *ONLY* when the sight method is not feasible.

1. Before aligning the base gun on the desired azimuth:

- Put a baseplate stake in the ground to mark the location of each mortar.
- Locate the remaining mortars on the 75-meter front, with 35-40 meters between each mortar.
- Announce the desired mounting azimuth.

Example: "MOUNT MORTARS, AZIMUTH 2212"

- Place your compass on the baseplate stake to mark the approximate location of your mortar.
- Sight through your compass.
- Tell the ammunition handler where to align the aiming posts along the mounting azimuth.

2. Set remaining guns on the desired azimuth using the same compass you previously used.

NOTE: Using one compass will avoid some mechanical error.

- Mount each mortar.
 - Position the baseplate to a baseplate stake.
- Lay each mortar on aiming posts with a deflection of 3200 set on the M64 sight.
- Number each mortar from **RIGHT** to **LEFT**, facing in the direction of fire.

B. Use sight method.

1. Align the base gun on the desired azimuth.

- Lay the base mortar (normally 2) in the desired direction of fire by compass or registration on a known point.
- Mount and position any remaining mortars so all sights are visible from the base mortar.

NOTE: To do this, place the base mortar approximately 15 ft. forward of the 2 flanking mortars. The initial direction of fire must be approximately 500 mils to the left of perpendicular to the firing line.

- Move to the mortar sight of the base mortar and command:

Example: "SECTION, AIMING POINT THIS INSTRUMENT."

2. Refer remaining guns to the lens of the base mortar.

- The gunner will answer by announcing, **Example:** "AIMING POINT IDENTIFIED."
- Read the deflection from the sight of the base mortar.
- Determine the back azimuth of the deflection.
 - Announce this to the gunner of the mortar being laid.
- The gunner will repeat the announced deflection for his mortar.
 - He will place this deflection on his sight, and he will place relays on the sight of the base mortar.

3. Refer the base mortar to the lens of the remaining guns.

- Lay the vertical crossline of your sight on the other mortar sight and repeat the above procedure.
- After both mortars have been laid:
 - Announce, **Example:** "NUMBER 1 OR NUMBER 3, READY FOR RECHECK."

NOTE: After each mortar has been laid parallel within 0 or 1 mil, the mortar barrels will be parallel to the base mortar.

- As soon as each mortar is laid, command:

Example: "NUMBER 3, DEFLECTION 2800, REFER, PLACE OUT AIMING POSTS."

RESOURCES:

FM 23-36, 60mm Mortar, M224, January 1984
 FM 7-11C2, Soldier's Manual, September 1981
 FM 23-90, 81mm Mortar, February 1972
 MCI Course 03.23g, The M224, 60mm Mortar Crewman

TASK: COMPUTE FIRING DATA MANUALLY (60mm MORTAR) (G-0341-19.17/SGT)
COMPUTE FIRING DATA MANUALLY (81mm MORTAR) (G-0341-20.12/CPL)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: plotting board, map, FO's call for fire and firing tables.

STANDARDS: Data must be relayed to firing section(s) in a timely manner. Grid coordinators, deflection scale and target, mortar and FO positions must be added to plotting board. All magnetic azimuths must be converted to grid azimuths. The training steps must be performed sequentially.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:

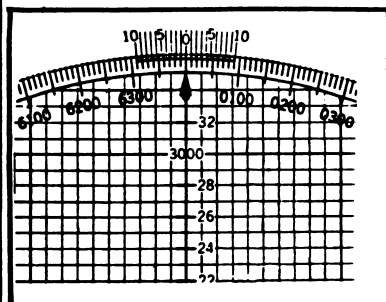
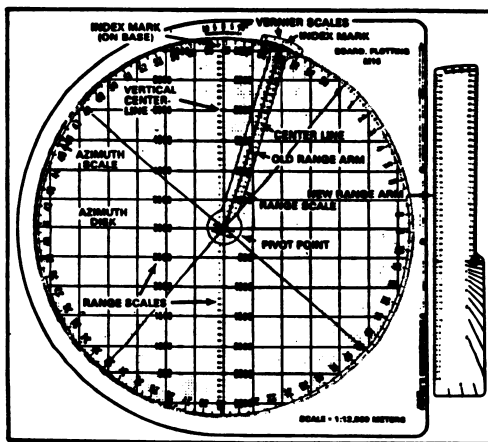
A. Prepare plotting board for operation.

1. Orient the disk to grid north (0 mils).

- Rotate the disk so that the zero mil direction reading is positioned at the top of the plotting board, under the base index and lined up with ZERO on the VERNIER scale.

PLOTTING BOARD - M16

Disk oriented ZERO mils.



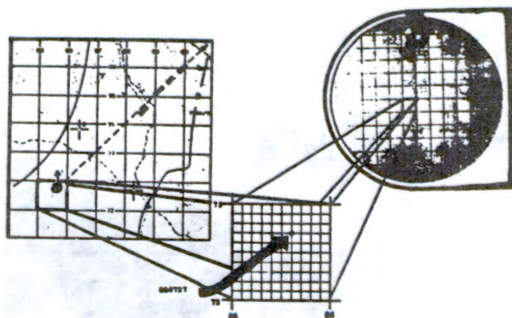
2. Plot the mortar position.

NOTE: Plot the mortar on the disk in the grid square to the LEFT and BELOW the pivot point (or another grid square below pivot point).

- Find the mortar grid square on the map.

- Plot the same coordinates in the lower LEFT grid square.

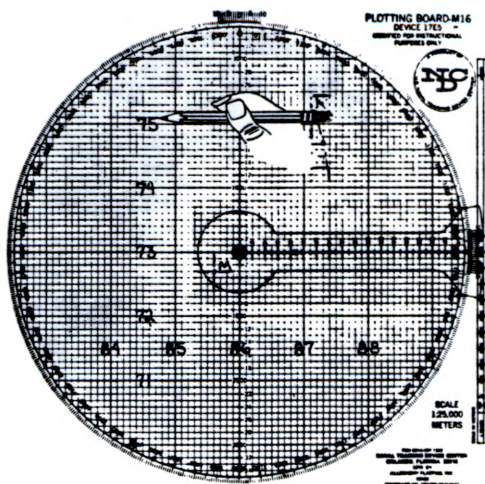
NOTE: Care must be taken so that the location of the mortar within this grid square is the same as the actual location on the map.



Plotting the Mortar in Relation to the Map

3. Establish the grid coordinate system.

- After mortar position is plotted, transfer the actual grid coordinate numbers onto the disk.
- Start with the coordinates of the mortar position and—
- Label the actual grid numbers that would correspond to the grid lines on the map.



Establishing the Grid System

4. Orient the disk to the mounting azimuth.

NOTE: - The mounting azimuth or direction of fire is prescribed by the platoon commander.
 - The mounting azimuth is the direction in which each of the mortars is initially aimed.

- Rotate the disk until you obtain the mounting azimuth in mils.

NOTE: To determine mounting azimuth, round off the direction of fire to the nearest 50 mils.

EXAMPLE:	Direction of Fire	Mounting Azimuth
	2315	2300
	2425	2450
	2435	2450

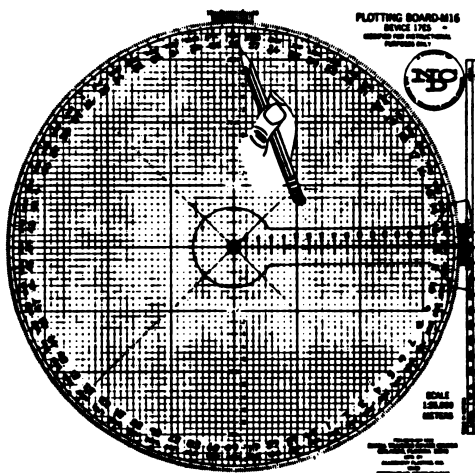
5. Construct the deflection scale.

- Set up deflection scale using 2800 mils deflection as the mounting azimuth and—

- Write 28 under the mounting azimuth.

NOTE: All mortars use 2800 mils as a standard starting point for deflection.

- Record the numbers on the deflection scale as shown in the figure below:



Constructing the Deflection Scale Using the Mounting Azimuth of 800 mils

NOTE: The plotting board is now set up for operation and the computer can now compute data for the mortars using the FO's call for fire.

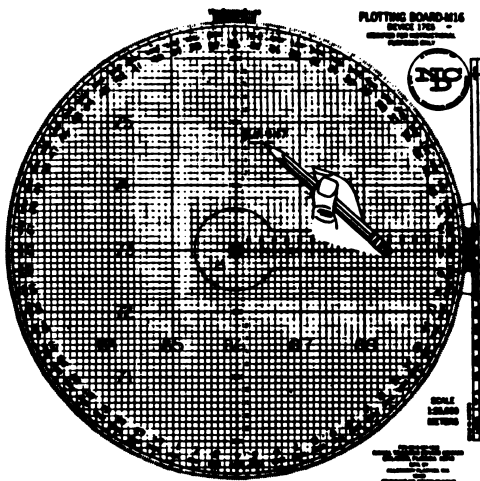
B. Plot target location.

Select one of the methods to plot target location(s).

A. Grid Coordinate Method

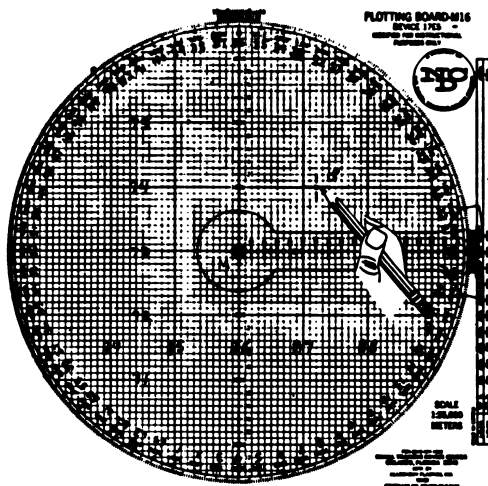
NOTE: - If the FO used the grid coordinate method to locate the target, the warning order will contain the word "GRID."
 - The actual target data will be a six or eight-digit grid coordinate number.

1. Rotate the disk and position the 0 mil direction reading at the top of the base index.
2. Plot the six-digit coordinate location using mapping techniques (reference G-0300-11.3).

**Plotting the Target Grid Coordinates****B. Polar Coordinate Method**

NOTE: - When using this method, the FO will announce the word "POLAR" in the warning order.
 - The actual target data will be announced as a grid azimuth and range from the FO's position to the target.
 - To locate TARGETS using the POLAR coordinate, the FO's position must be known and plotted on the plotting board.

1. Rotate the disk to 0 mils, and—
2. Plot the coordinate of the FO position.



Disk Referred to 0 mils and FO Position Plotted

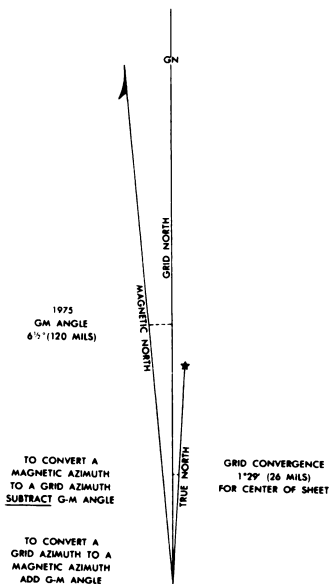
- Convert the FO's magnetic azimuth to grid direction using the LARS rule (if the FO does not send a grid direction). Declination diagram is at the bottom of the map.

EXAMPLE:

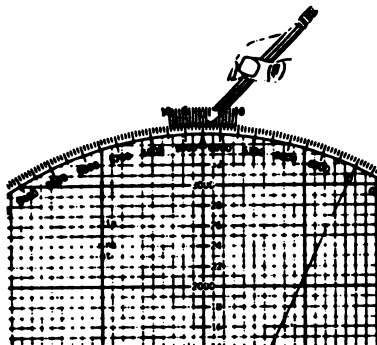
- FO sent 6070 mils magnetic as the O-T azimuth.
- Grid north is right of magnetic north (120 mils).
- Use the LARS rule, subtract 120 from the FO's O-T azimuth for grid direction.

6070-Magnetic
~~-120-GM Angle~~
 5950-GRID DIRECTION

- Rotate the disk to the grid direction (or O-T direction).

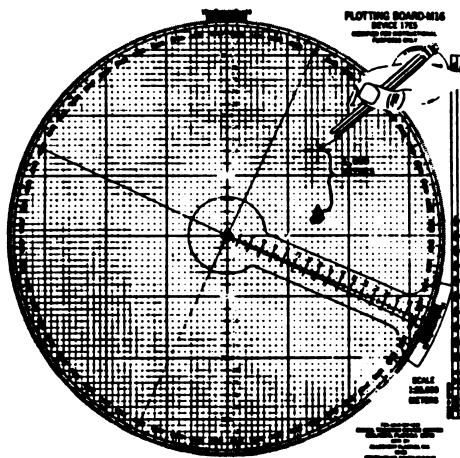


Declination (bottom of map)



Rotating the Disk to the Grid Direction (5950 mils).

5. Count the specified range from the FO's plotted position to a position directly above the FO's position and—
6. Plot the target location.

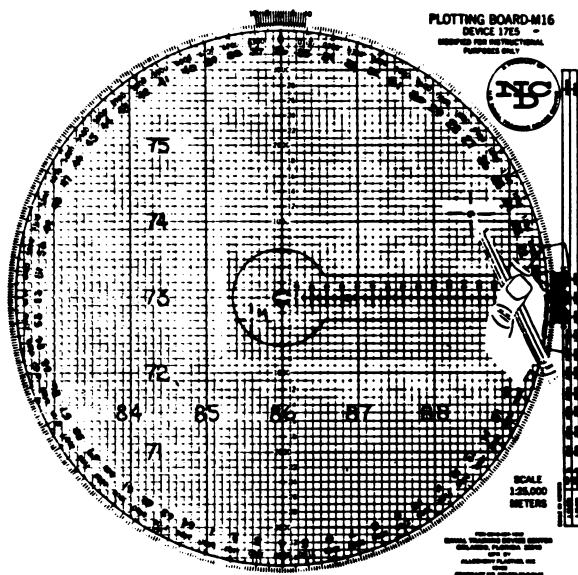


Measuring Range from FO's Position to the Target Position

C. Shift From Known Point Method

NOTE: Using this method, the warning order will contain the word "SHIFT".

1. Rotate the disk to 0 mils and—
2. Plot the location of the known point.



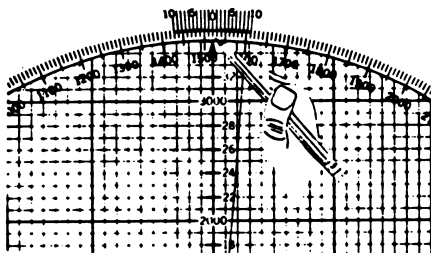
Orienting Disk to 0 mils and Plot the Known Point

3. Convert the FO's magnetic azimuth into grid direction if required.

- See step 3, B. Polar Coordinate Method, for further explanation.

EXAMPLE: 1640-Magnetic (FO sent 1640 magnetic as the OT azimuth)
 -120-Grid Angle
 1520-Grid Direction

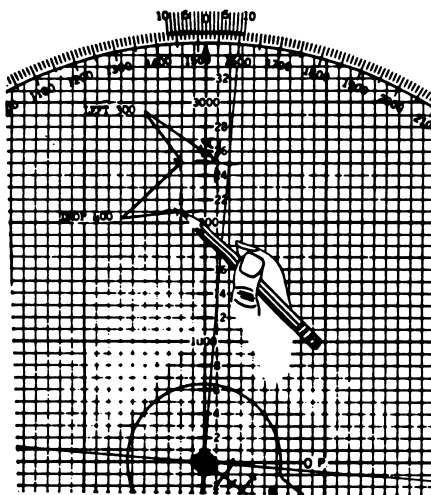
4. Rotate the disk to the grid direction or OT-line.
- Move the disk to the grid direction of 1520 mils.



Rotating Disk to Grid Direction

5. Count the distance from the known point and—
6. Plot the target location, (LEFT, RIGHT, ADD, OR DROP).

Grid Direction 1520 mils



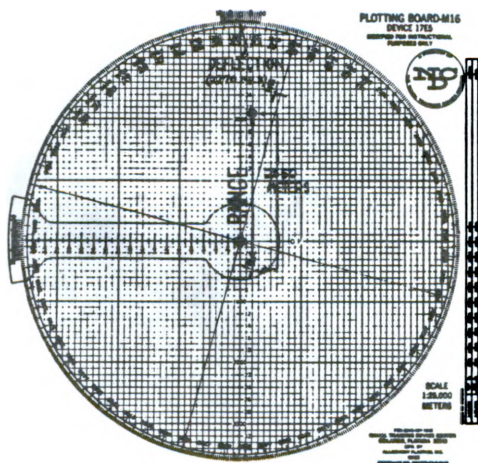
Counting Distance from the Known Point to the Target Location

C. Measure deflection and range from mortars to target.

1. Rotate the disk so that the target is positioned directly above the plotted mortar position.
2. To obtain the RANGE, count the number of boxes between the mortars and the target and—

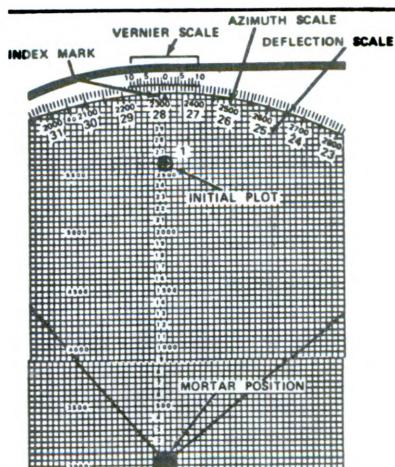
3. Multiply the number of boxes you counted in step 2(above) by 100.

NOTE: Each box is 100 meters square.



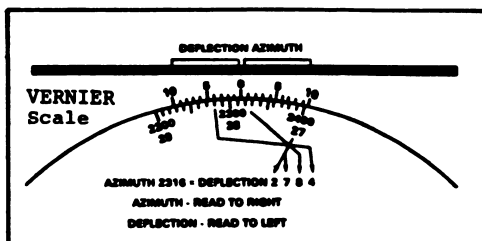
Position the Target Directly Above the Mortar

4. To determine DEFLECTION from the mortars to the target, read the deflection scale at the top of the plotting board.
5. If the base index line falls between two 10-mil markings, use the VERNIER scale to obtain the last digit in the deflection.
6. Use the LEFT side of the scale to obtain the nearest mil.
7. To DETERMINE the last digit for deflection (on the RIGHT), FIND the 10-mil marking that ALIGNS with the single mil marking on the scale and—
8. Count the number of mils back to the base index (0-mil marking).



9. Study example provided to assist you in determining deflection.

NOTE: In this example the direction of fire is rounded to 2300 to get the mounting azimuth.



- LOOK for the first number to the RIGHT of the index mark. In this example, it is 27.

- Read the third digit from the 10-mil marks between deflection numbers 27 and 28.

NOTE: The index mark is between the eighth and ninth 10-mil mark, this makes the third digit 8.

- Read the fourth digit from the VERNIER scale. For DEFLECTIONS, use the LEFT half of the scale.

- Count the 1 mil marks, STARTING from 0—

- Move to the left until one of the 1 mil marks of the VERNIER scale and one of the 10 mil markings on the AZIMUTH disk are ALIGNED.

NOTE: In this case, the fourth 1-mil mark is aligned, this makes the fourth digit 4.

D. Extract data from firing tables.

GENERAL INFORMATION: 81mm(M29) Firing Tables:

- Divided into 10 sections
- Each section contains firing data for a given propelling charge.
- Each section contains five (5) tables which provide:

TABLE A - components of a 1-knot wind

TABLE B - Air temperature and density corrections

TABLE C - Variations in muzzle velocity

TABLE D - Basic data and correction factor

TABLE E - Supplementary data

Purpose of Firing Tables: They are used to provide the FDC computer with information pertaining to **ELEVATION** and **CHARGE** for mortar tubes and ammunition rounds which will enable the rounds to reach specific ranges.

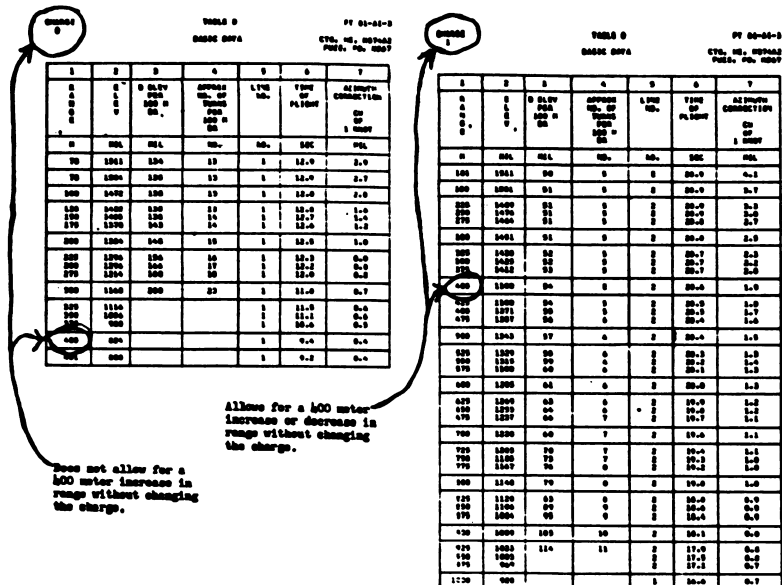
Types of Tables Used: 1) Tabular Firing Tables
2) Abridged Firing Tables

Tabular Firing Table Information

1. Refer to Table D for each charge (see figure below).
2. Select and use the lowest charge that will allow 400 meters increase or decrease in range.

NOTE: Once the mission begins, use the same charge zone as long as possible.

TABULAR FIRING TABLE:



ABRIDGED FIRING TABLE:

PS 04-02-1

CARTERS, W. 0424
PAGE, C. 0424

PT 81-48-2

CANTRIDGE, NH, 04021
FROST, CO. 05034

1	2	3	4	5	6
Range	Standard	Change in Maximum for 100 meters Change in Length			Maximum Oxidation
m	mil	Ang	mil	mic	m
1000	1.164	0	50	50	1679
1500	1.133	0	37	70	1636
1600	1.128	0	35	70	1627
1700	1.114	0	30	70	1607
1900	1.104	0	30	70	1587
1900	1.094	0	0	0	1587
2000	1.089	0	0	0	1582
2000	1.079	0	0	0	1567
2000	1.069	0	0	0	1547
2000	1.059	0	0	0	1527
2000	1.049	0	0	0	1507
2000	1.039	0	0	0	1487
2000	1.029	0	0	0	1467
2000	1.019	0	0	0	1447
2000	1.009	0	0	0	1427
2000	0.999	0	0	0	1407
2000	0.989	0	0	0	1387
2000	0.979	0	0	0	1367
2000	0.969	0	0	0	1347
2000	0.959	0	0	0	1327
2000	0.949	0	0	0	1307
2000	0.939	0	0	0	1287
2000	0.929	0	0	0	1267
2000	0.919	0	0	0	1247
2000	0.909	0	0	0	1227
2000	0.899	0	0	0	1207
2000	0.889	0	0	0	1187
2000	0.879	0	0	0	1167
2000	0.869	0	0	0	1147
2000	0.859	0	0	0	1127
2000	0.849	0	0	0	1107
2000	0.839	0	0	0	1087
2000	0.829	0	0	0	1067
2000	0.819	0	0	0	1047
2000	0.809	0	0	0	1027
2000	0.799	0	0	0	1007
2000	0.789	0	0	0	987
2000	0.779	0	0	0	967
2000	0.769	0	0	0	947
2000	0.759	0	0	0	927
2000	0.749	0	0	0	907
2000	0.739	0	0	0	887
2000	0.729	0	0	0	867
2000	0.719	0	0	0	847
2000	0.709	0	0	0	827
2000	0.699	0	0	0	807
2000	0.689	0	0	0	787
2000	0.679	0	0	0	767
2000	0.669	0	0	0	747
2000	0.659	0	0	0	727
2000	0.649	0	0	0	707
2000	0.639	0	0	0	687
2000	0.629	0	0	0	667
2000	0.619	0	0	0	647
2000	0.609	0	0	0	627
2000	0.599	0	0	0	607
2000	0.589	0	0	0	587
2000	0.579	0	0	0	567
2000	0.569	0	0	0	547
2000	0.559	0	0	0	527
2000	0.549	0	0	0	507
2000	0.539	0	0	0	487
2000	0.529	0	0	0	467
2000	0.519	0	0	0	447
2000	0.509	0	0	0	427
2000	0.499	0	0	0	407
2000	0.489	0	0	0	387
2000	0.479	0	0	0	367
2000	0.469	0	0	0	347
2000	0.459	0	0	0	327
2000	0.449	0	0	0	307
2000	0.439	0	0	0	287
2000	0.429	0	0	0	267
2000	0.419	0	0	0	247
2000	0.409	0	0	0	227
2000	0.399	0	0	0	207

2250 meters range to target. Charge 5 is the lowest charge which will leave room for a 400 meter increase or decrease in range, without changing the charge.

1	2	3	4	5	6	7	8	9	10	
Range	Bandwidth	Change in Range for 100 Miles Change in Bandwidth	Time of Flight	Maximum Distance	Range	Bandwidth	Change in Range for 100 Miles Change in Bandwidth	Time of Flight	Maximum Distance	
m	m/s	deg	m/s	sec	m	m/s	deg	m/s	sec	
1005	1216	00	27	33	1343	2025	0000	34	34	2044
1005	1211	00	27	33	1336	2025	0011	35	37	2047
1005	1206	00	28	33	1330	2025	0022	36	39	2050
1005	1197	01	28	33	1322	2025	0033	37	41	2053
1000	1190	01	28	33	1315	2025	0044	38	43	2056
1075	1183	01	29	33	1308	2025	0055	39	45	2059
1075	1174	02	29	33	1300	2025	0106	40	47	2102
1075	1165	02	29	33	1293	2025	0117	41	49	2105
2000	1161	05	31	32	1291	2700	000	45	26	2817
2025	1155	05	31	32	1284					
2025	1146	06	31	32	1277					
2075	1130	06	31	32	1269					
2100	1124	06	32	32	1264					
2125	1122	05	32	32	1259					
2150	1113	05	32	32	1250					
2175	1105	02	30	32	1241					
2200	1096	02	30	31	1230					
2225	1087	01	29	31	1220					
2250	1079	01	27	31	1210					
2275	1069	00	26	31	1200					
2300	1059	00	29	31	1194					
2325	1050	00	40	31	1181					
2350	1039	00	50	31	1166					
2375	1030	00	43	30	1154					
2400	1019	07	44	30	1141					
2425	1006	07	46	30	1095					
2450	995	50	50	30	1061					
2475	982	50	51	29	1043					
2500	969	50	54	29	1044					

Abridged Firing Table Information

4. For additional practice, study the above Figure to determine the correct charge for 2250 meters range to target.
- Refer to explanation under step 3 (Tabular Firing Table).

E. Relay data to firing section(s).

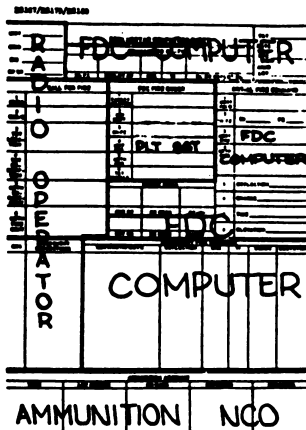
1. Refer to and use the 81mm Mortar Computer Sheet to relay accurate information on "attacks" by target number.

- Locate the section labeled “FDC Fire Order.”

- Reference target number in the "Target location" column.

- Extract and relay the initial fire command(s) from the data listed.

NOTE: The same data may be found on the FIRING DATA SHEET.



TASK: BORESIGHT 81MM MORTAR (G-0341-20.7/LCPL)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: screwdriver, assembled and mounted 81mm mortar, M45 boresight and M2 compass. Platoon's HQ will provide an M2 Aiming Circle.

STANDARD: Within 5 minutes, the mortar sight will be calibrated for both deflection and elevation with a tolerance of 1 mil for either method.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:**A. Use M45 Boresight method****CALIBRATION FOR ELEVATION**

1. Install the boresight on the mortar barrel.
2. Center the cross-level vial by rotating the boresight slightly around the outside diameter of the mortar barrel.

NOTE: Slight movements may be made by loosening the clamp screw and lightly tapping the boresight body.

3. When the bubble centers, **TIGHTEN** the clamp screw.
4. Elevate the mortar barrel until the boresight elevation level vial is centered.

NOTE: The mortar is now set at 800 mils (45°) elevation.

5. Using the elevation knob, **ELEVATE** or **LOWER** the sight unit until the elevation level bubble is **CENTERED**.
6. If necessary, cross-level the sight unit.
7. **RECHECK** all level bubbles.

NOTE: The reading on the coarse elevation scale of the sight unit should be 800 mils and reading on the elevation micrometer scale should be "0".

8. IF adjustments are needed, do the following:

(a)

- Loosen the two screws which secure the coarse elevation scale.
- Slip the scale until the 800-mil mark on the scale coincides with the reference mark on the housing.
- **TIGHTEN** the two screws to secure the scales.

(b)

- loosen the two screws on the elevation micrometer knob.
- Slip the elevation micrometer scale until the "0" mark on the micrometer scale coincides with the reference mark on the housing.
- **TIGHTEN** two of the screws to secure the micrometer scale.

CALIBRATION FOR DEFLECTION

1. Traverse the mortar.

- Cross-level simultaneously, until the vertical line of the boresight telescope is laid on an aiming point or any object at least 200 meters away.
- Check level vials on the boresight and the mortar sight.

NOTE: All bubbles must be centered.

2. Align sight.

- Align the vertical line of the mortar sight on the same aiming point by referring the sight (turning the deflection knob).

3. Place the micrometer on zero.

- If the deflection micrometer does not read zero, loosen the two boresight locking screws on the deflection knob and slip the micrometer until the index is opposite the zero-mil gradation.

NOTE: The deflection scale should also read zero (if it does not, slip the scale until the index is opposite the zero gradation).

4. Recheck all bubbles.

NOTE: The mortar is now calibrated for deflection.

B. Use M2 Compass method (elevation).

1. Mount the mortar on level ground and center the traversing bearing.

2. Elevate the barrel 800 mils.

- Set an elevation of 800 on the elevation scale of the M2 compass.
- Turn the compass on its left side and lay it inside of mouth of the barrel.
- Elevate or depress the mortar until the bubble is centered in the vial.

3. Cross-level the mortar.

4. Center the elevation bubble of the sight by turning the elevation micrometer knob on the sight unit.

5. If the reading of the elevation of the sight is not 800 mils and the reading on the elevation micrometer is not "0," MAKE adjustments for elevation on the elevation scale and micrometer knob. (See step A., 8.)

C. Use M2 Aiming circle method (deflection).

- Select one of the following methods.

ANGLE METHOD

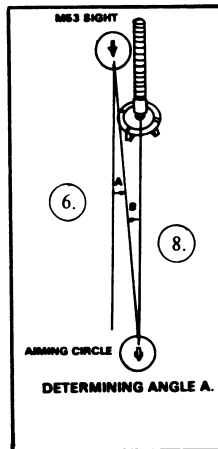
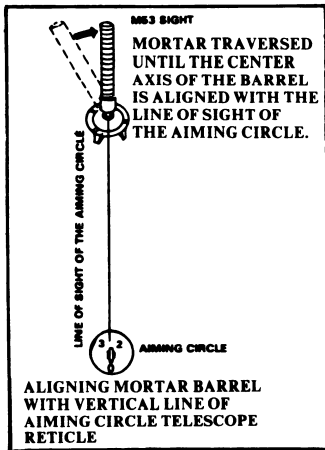
1. Set up the aiming circle 25 meters to the rear of the mounted mortar (800 mils elevation).

2. Set azimuth scale and micrometer scale of aiming circle at zero.

3. Align the vertical crossline on the center of baseplug of mortar.
4. Traverse and cross-level the mortar until the center axis of the barrel from the baseplug to the muzzle is aligned with the vertical crossline of the aiming circle in the telescope reticle.
5. Turn the deflection knob of the sight until the vertical line is centered on lens of the aiming circle; and —
6. Read the Angle A, opposite the fixed index.
7. Turn the azimuth micrometer knob of the aiming circle until the vertical line of the telescope is laid on the center of the sight lens; and —
8. Read the Angle B, opposite the azimuth scale index.

NOTE: Angles A and B should be the same.

9. If angles A and B are not the same in mils, SLIP sight micrometer scale to correct reading.
10. Recheck all bubbles.



DISTANT AIMING POINT METHOD

1. Set up the aiming circle and align the vertical crossline on a distant aiming point (a sharp, distant object not less than 200 meters distant).
2. Mount mortar on level ground 25 meters from aiming circle and on line between aiming circle and distant aiming point.
3. Center the traversing bearing and cross-level.
4. With the vertical line of the aiming circle still laid on the distant aiming point, MOVE the mortar baseplate until the center of the baseplug is aligned with the vertical line of the aiming circle.

5. Traverse and cross-level until axis of barrel, from baseplug to muzzle, is aligned with vertical line of aiming circle.
6. Lay the vertical line of the sight unit on the same distant aiming point (deflection should be 3200 mils).
 - If deflection is not 3200 mils, adjust the micrometer scale.
7. Recheck all bubbles.

RESOURCES:

FM 23-90, 81mm Mortar
MCI Course, 03.22i, The 81mm Mortar Crewman
FM 7-11B1, Soldier's Manual
FM 7-11C2, Soldier's Manual

TASK: RECORD TARGET DATA (81mm Mortar) (G-0341-20.14/CPL)

CONDITIONS: Conditions are determined by mission requirements. You, acting as the FDC computer, will be provided: a firing data sheet, target list, FO's call for fire, and a computer record and a Computer's Record.

STANDARD: All elements of the initial fire command section and the subsequent fire command section of the Computer's Record must be completed. All sections of the firing data sheet must be completed. The target number must be recorded, with the appropriate firing data list to the right.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:**A. Complete computer's record.**

NOTE: Use Computer's Record, DA Form 2399, to record:

- FO's call-for-fire
- FO's corrections
- Firing data
- Commands to the mortars during a fire mission

NOTE: Computer's record and DA Form 2399 are the same form.

COMPUTER'S RECORD											
For use of this form, see FM 23-91, the proponent agency is U. S. Continental Army Command											
DOC	A CO. 1st		DATE	17 MAR 68		TIME	0630		TEST NO.	B 00101	
ST	CNC NO CORR		CHART DEFL		26.8		CHART NO		100		
DEFL CORR			ANGLE 1		0.00		CNC		5		
CALL - FOR - FIRE			FDC ORDER				INITIAL FIRE COMMAND				DDG EXP
OP. 1 FOR FIRE FROM FDC DIRECTION FROM RIGHT TO AND 000 PLATING FROM ADJUST FOR			ADJUST TO FIRE				ADJUST TO FOLLOW				
			ADJUST TO ADJ				SHELL & PUSE				
			METHOD OF ADJ				ADJUST TO FIRE				
			BASE FOR CORR				METHOD OF FIRE				
			SHELL CORR				DEFLECTION				
			SHELL & PUSE				CHARGE				
OBSERVER CORR			CHART DATA				SUBSEQUENT COMMANDS				
REV	NO	TIME	DEFL	CNC	ADJUST	METHOD	DEFL	TO	TIME	ELEV	
100	100	0630	26.8	0.00	0.00	0.00	26.8	0.00	116.9	1	
110	100	0630	26.79	0.00	0.00	0.00	26.79	0.00	116.6	1	
FIRE FOR TARGET											
AF ANY DAMAGE											
ASSUMPTION											
LOT NUMBER											
TYPE	01		01		01		01		01		
ON HAND	200		60		20		20		20		
RECEIVED	0		0		0		0		0		
TOTAL	200		60		20		20		20		
EXPENDED	17		0		0		0		0		
RE-AMMUN	223		60		20		20		20		

DA Form 2399, 1 May 58

REPLACES DA FORM 2399, 1 Jun 58, WHICH IS OBSOLETE

For 81mm mortar

NOTE: Because of space considerations, the following figures to be completed in this task have been divided into sections marked by Roman numerals, e.g., I, II, III, IV, etc. Each Roman numeral section has been further divided into sections marked by circled capital letters, e.g., A, B, C, D, etc. Some of the sections marked by the circled letters have been further divided and are marked by circled Arabic numbers, e.g., 1, 2, 3, 4, etc.

Fill in all elements on the Computer's Record, using the following outlined information to assist you.

NOTE: Section I of figure shown at bottom of page to correspond with text at top of page.

(A) ORG (organization)

- Record the Unit that is firing the mission.

(B) DATE

- Record the date the mission is fired.

(C) TIME

- Record the time the mission was received (the call-for-fire recorded).

(D) TGT NO. (target number)

- Record the number assigned to the mission (when used).

(E) VI (vertical interval)

- Record the altitude difference used for the mission.

(F) CHG/RG/CORR (change/range correction)

- Record the correction factor used for the VI difference or range correction (RG CORR = half VI).

(G) CHART DEFL (charge deflection)

- Record the initial chart deflection from the mortar position to the target being engaged.

(H) CHART RG (chart range)

- Record the initial chart range from the mortar position to the target being engaged.

(I) DEFL CORR (deflection correction)

- Record deflection correction used for the mission.

NOTE: This is used only with the surveyed firing chart.

(J) ANGLE T

- Record the mil difference between the gun-target (GT) line and the observation-target (OT) line (recorded to nearest 10 mils and transmitted to nearest 100 mils).

(K) CHG (charge)

- Record the lowest charge that can be fired to engage the target.

COMPUTER'S RECORD

For use of this form, see FM 23-91; the proponent agency is U. S. Continental Army Command

ORG <i>A CO. 1/66</i>	(A)	DATE <i>19 MAR 68</i>	(B)	TIME <i>0630</i>	(C)	TGT NO. <i>B K0101</i>	(D)
VI	(E)	CHG RG CORR	(F)	CHART DEFL <i>2681</i>	(G)	CHART RG <i>1400</i>	(H)
DEFL CORR	(I)	ANGLE T <i>0430</i>	(J)	CHG <i>3</i>	(K)		

I {

NOTE: Section II of figure shown at bottom of page to correspond with text at top of page.

L CALL-FOR-FIRE

- Record the FO's request for fire.

NOTE: Use this also to record the message to the observer (MTO).

M FDC ORDER

1. MORT TO FFE (mortar to fire for effect)

- Record those mortars that will be used during the fire for effect phase of the mission.

2. MORT TO ADJ (mortar to adjust)

- Record the mortar(s) that will be used during the adjustment phase of the mission.

3. METH OF ADJ (method of adjustment)

- Record the number of rounds used by the adjusting mortar(s) for each correction during the adjustment phase of the mission.

4. BASIS FOR CORR (basis for correction)

- Record the point (usually the registration point) from which the correction factors to be applied are determined (surveyed chart only).

5. SHEAF CORR (sheaf correction)

- Record the type of sheaf, other than parallel sheaf, that will be used during the fire for effect.

6. SHELL AND FUZE

- Record the shell and fuze combination that will be used for the mission.

NOTE: If different types of ammunition are used during the mission, list the different rounds. For example: SHELL and FUZE: HEQ in Adj, HEQ/WP in FFE

7. METHOD OF FFE (method of fire-for-effect)

- Record the number and type of rounds per mortar in the FFE phase of the mission.

NOTE: For example: METHOD OF FFE: 2 Rds HE, 2 Rds WP

CALL - FOR - FIRE L	FDC ORDER M	INITIAL FIRE COMMAND N	RDS C EXP D
II OR-1 FIRE MISSION FROM RP DIRECTION 2900 RIGHT 70 ADD 800 PLATOON INITIAL ADJUST FIRE	1 MORT TO FFE	1 MORT TO FOLLOW <i>SHEAF</i>	
	2 MORT TO ADJ	2 SHELL & FUZE <i>HE QUICK</i>	
	3 METH OF ADJ	3 MORT TO FIRE <i>NO. 2</i>	
	4 BASIS FOR CORR	4 METHOD OF FIRE <i>1 Round</i>	
	5 SHEAF CORR	5 DEFLECTION <i>2681</i>	
	6 SHELL & FUZE	6 CHARGE <i>3</i>	
	7 METHOD OF FFE	7 TIME SETTING	
	8 RC LATERAL SPREAD	8 ELEVATION <i>1806</i>	
	9 ZONE		
	10 TIME OF OPENING FIRE		

NOTE: Section II of figure shown at bottom of page to correspond with text at top of page.

8. RG/LATERAL SPREAD (range/lateral spread)

- Record with illumination either:

- Rg Spread: 60-mm mortar, 250 meters between rounds for M335A2; 81-mm mortar, 500 meters between rounds
- Lateral Spread: 60-mm mortar, 250 meters between rounds for M335A2; 81-mm mortar, 500 meters between rounds
- Rg/Lateral Spread: A combination of both

9. ZONE (or Searching Fire)

- Record the data for zone or searching fire.

NOTE: This procedure is not normally used by the USMC because of the amount of ammunition used.

10. TIME OF OPENING FIRE

- Record the fire control for the mission.

NOTE: W/R = When ready; AMC = At my command (either the FO or the FDC). The FDC order is usually filled in by the computer/ section leader or platoon sergeant. This area describes how the FDC will engage the target.

N INITIAL FIRE COMMAND

NOTE: This is the first fire command that is sent to the mortar section for a mission. To complete the initial fire command, the computer must use the initial chart data, any corrections, and information in the FDC order.

1. MORT TO FOLLOW (mortar to follow or FFE)

- Record all mortar(s) to follow all commands or the mortar(s) that will be used in the FFE.

CALL - FOR - FIRE (L)	FDC ORDER (M)	INITIAL FIRE COMMAND (N)	RDS EXP (C)
II OR-1 FIRE MISSION FROM RP DIRECTION 2900 RIGHT TO ADD 300 PLATOON INITIAL ADJUST FIRE	1 MORT TO FFE	1 MORT TO FOLLOW..... <i>EFFERNA</i>	
	2 MORT TO ADJ.....	2 SHELL & FUZE..... <i>HE QUIN</i>	
	3 METH OF ADJ.....	3 MORT TO FIRE..... <i>NO. 2</i>	
	4 BASIS FOR CORR	4 METHOD OF FIRE..... <i>1 Round</i>	
	5 SHEAF CORR.....	5 DEFLECTION..... <i>2681</i>	
	6 SHELL & FUZE	6 CHARGE..... <i>3</i>	
	7 METHOD OF FFE	7 TIME SETTING	
	8 RG LATERAL SPREAD	8 ELEVATION..... <i>1206</i>	
	9 ZONE		
	10 TIME OF OPENING FIRE		

NOTE: Section II of figure shown at bottom of page to correspond with text at top of page.

2. SHELL AND FUZE

- Record the shell and fuze combination used during the mission.
- If it is an adjustment mission, record the round used during the adjustment.

3. MORT TO FIRE (mortar to fire)

- Record the number of the mortar(s) being used during the adjustment phase.

4. METHOD OF FIRE

- Record the number of rounds being used for adjustment and in the FFE and the type, if mixed.

NOTE: Any control by the FDC would be placed here. For example:

METHOD OF FIRE: 1 round high-explosive superquick fuze (HEQ) in adjustment; 2 rounds HEQ/2 rounds white phosphorus (WP) in FFE, AMC. (Announcing the number of rounds in the FFE gives the ammunition handler time to get those rounds ready in the event of an immediate suppression mission.

METHOD OF FIRE: 3 Rds HEQ.

5. DEFLECTION

- Record the command deflection to fire the first round.

6. CHARGE

- Record the command charge needed to fire the first round.

7. TIME SETTING

- Record the time or height setting needed on mechanical-time fuzes and proximity fuze to engage the target.

CALL - FOR - FIRE (L)	FDC ORDER (M)	INITIAL FIRE COMMAND (N)	RDS C EXT
II OP-1 FIRE MISSION FROM RP DIRECTION 8900 RIGHT 70 ADD 800 PLATOON ACTION ADJUST FIRE	1 MORT TO FFE	1 MORT TO FOLLOW <i>SECTION</i>	
	2 MORT TO ADJ	2 SHELL & FUZE <i>HE QUICK</i>	
	3 METH OF ADJ	3 MORT TO FIRE <i>RP 2</i>	
	4 BASIS FOR CORR	4 METHOD OF FIRE <i>1 ROUND</i>	
	5 SHEAF CORR	5 DEFLECTION <i>26.8'</i>	
	6 SHELL & FUZE	6 CHARGE <i>3</i>	
	7 METHOD OF FFE	7 TIME SETTING <i>1806</i>	
	8 RC LATERAL SPREAD	8 ELEVATION <i>1806</i>	
	9 ZONE		
	10 TIME OF OPENING FIRE		

NOTE: Section II of figure shown at bottom of page to correspond with text at top of page.

8. ELEVATION

- Record the elevation used for engaging the target.

NOTE: It is the elevation obtained from the FTS for the range to be fired. This is also the command to fire in the absence of any type of fire control.

9. RDS EXP (rounds expended)

- Record a cumulative count of the number of rounds fired for the initial fire command.

CALL - FOR - FIRE (L)	FDC ORDER (M)	INITIAL FIRE COMMAND (N)	RDS EXP (O)
II OR-1 FIRE MINE FROM RP DIRECTION 8900 RIGHT 70 ADD 300 PLATOON INITIAL ADJUST FIRE	1. SORT TO FFE	1. SORT TO FOLLOW..... <i>SECTION</i>	
	2. SORT TO ADJ	2. SELL & FUZE..... <i>NE QUICK</i>	
	3. METH OF ADJ	3. SORT TO FIRE..... <i>NO. 5</i>	
	4. BASIS FOR CORR	4. METHOD OF FIRE..... <i>1 Round</i>	
	5. SHEAF CORR.....	5. DEFLECTION..... <i>2681</i>	
	6. SELL & FUZE	6. CHARGE..... <i>3</i>	
	7. METHOD OF FFE	7. FINE SETTING	
	8. LG LATERAL SPREAD.....	8. ELEVATION..... <i>1806</i>	
	9. ZONE		
	10. TIME OF OPENING FIRE		

NOTE: Section III of figure shown at bottom of page to correspond with text at top of page

P)OBSERVER CORRECTIONS

1.) DEV (deviation)

- Record the **LEFT/RIGHT**, in meters, sent in by the observer.
 - For example: **DEV: L 200** = The observer wants a “left 200 meters” correction.

2. **RG (range)**

- Record the **ADD/DROP**, in meters, sent in by the observer.
 - For example: RG: “Add 200” is recorded as +200, while “Drop 200” is recorded as -200.

3.) (TIME) HEIGHT

- Record the height correction the observer wants (usually sent with illumination).
 - For example: For corrections in height, the observer will send UP/DOWN: “UP 200” or DOWN 200” and record the same.

① CHART DATA

- Record chart data obtained from the M16 plotting board for the corrections that the observer requested.

NOTE: This section is used only when firing corrections are to be applied to the chart data to obtain firing data.

[illegible]

R) SUBSEQUENT COMMANDS

NOTE: The command data are sent to the mortar(s) to fire the next round(s). Those commands (DEFL/CHG/ELEV) contain chart data and all firing corrections. The *only* things that are announced are any changes from the initial fire command and *elevation*, which is always given.

1.) MORT TO FIRE (mortar to fire)

- Record applicable information.

2. METHOD OF FIRE

- Record the number of rounds and the type of fire.

3. DEFL (deflection)

- Record the command deflection(s) to fire the round(s).

4.) RG/CHG (range/charge)

NOTE: The range is recorded and used to determine the charge which is given to the mortars (range is not given to mortars).

5. TIME SETTING

- Record the time setting needed for the mechanical-time fuze to engage the target, or proximity setting for proximity fuze.

6. ELEV (elevation)

- Record the elevation used for this round(s).

IV

NOTE: Section IV of figure shown at bottom of page to correspond with text at top of page.

8 AMMUNITION

NOTE: This section is used to keep track of the rounds. The information in this section should be updated after each mission.

1. LOT NUMBER

- Record the different lot numbers of the rounds on hand.

2. TYPE

- Record the type that's applicable.

NOTE: Any one of the following types can be used. For example: high explosive, quick (HEQ); white phosphorus (WP); proximity (PROX) fuze; illuminating (ILL).

3. ON HAND

- Record the number, by lot number, the section has on hand.

4. RECEIVED

- Record the number and type of rounds received.

5. TOTAL

- Record the combination of rounds on hand and those received.

6. EXPENDED

- Record the number, by lot number used, for the mission.

IV

AMMUNITION 8									
1 LOT NUMBER									
2 TYPE	HE	WP	ILL	PROXIMITY					
3 ON HAND	240	60	20	40					
4 RECEIVED	0	0	0	0					
5 TOTAL	240	60	20	40					
6 EXPENDED	17	0	0	0					
7 REMAINING	223	60	20	40					

NOTE: Section IV of figure shown at bottom of page to correspond with text at top of page.

7. REMAINING

- Record the number, by lot number, of the rounds remaining.

NOTE: If the proximity fuze is fired, it must be subtracted, as well as the high explosive (HE) body that was used. If a superquick (SQ) fuze is removed from a fuze round for firing a proximity fuze, both fuzes must also be recorded in the ammunition section as on-hand.

IV

AMMUNITION (8)									
1 LOT NUMBER									
2 TYPE	HE	WP	III	PROXIMITY					
3 ON HAND	240	60	20	40					
4 RECEIVED	0	0	0	0					
5 TOTAL	240	60	20	40					
6 EXPENDED	17	0	0	0					
7 REMAINING	223	60	20	40					

DA Form 2399, 1 Oct 71

REPLACES DA FORM 2399, 1 JUL 60, WHICH IS OBSOLETE.

NOTE: Section I of figure shown at bottom of page to correspond with text at top of page.

B. Complete firing Data Sheet.

NOTE: The Data Sheet, DA Form 2188-R, is used by the computer to record the data pertaining to the mortar section or platoon and the firing data for each target engaged that may be of future value.

Fill in *ALL* elements on the firing data sheet, using the following outlined information to assist you.

A ORGANIZATION

- Record the unit to which the mortar section or platoon is assigned.

B MORTAR GRID

- Record the six or eight-digit grid coordinates of the location of the mortar section or platoon, usually the grid of the base mortar.

C MORTAR ALT (mortar altitude)

- Record the altitude of the mortar position to the nearest 10 meters.

D DATE

- Record the date the Data Sheet was prepared.

E DIR OF FIRE (direction of fire)

- Record the initial direction of fire that is used to set up the unit.

NOTE: This is usually determined by the platoon sergeant or commander using the situation map and determining the DOF to the center of sector (area of operation), registration point (RP), or the target being engaged initially. It is determined to the nearest mil.

DATA SHEET
For use of this form, see FM 23-81; the proponent agency is U.S. Army Training and Doctrine Command.

A ORGANIZATION **A** Co 1/6 **B** MORTAR GRID **01457805** **C** MORTAR ALT **250** **D** DATE **12 MAY 77**

E DIR OF FIRE **5130** **H** P. GRID 1 **01167716** **I** G.P. ALT 1 **325** **J** RCL **-27**

F DRIFT **—** **K** DEF. DRIFT **R.13**

G WIND AZ **5150** **L** WIND DIR **0130**

L

NOTE: Section I of figure shown at bottom of page to correspond with text at top of page.

F) DRIFT

NOTE: Use this only for the 4.2 inch mortar.

G) MT AZ (mounting azimuth)

- Record the azimuth used to lay the mortars.

NOTE: This is the DOF rounded off to the nearest 50 mils. Rounding off the DOF for these systems is for ease of setting up the M16/M19 plotting board.

H) OP GRID

- Record the:
 - Location of each observer (if known, to either 6-digit or 8-digit grid coordinates).
 - Observer's call sign.

I) OP ALT (altitude)

- Record the altitude of each observer's position.

I {

DATA SHEET							
For use of this form, see FM 23-81; the proponent agency is U.S. Army Training and Doctrine Command.							
A ORGANIZATION	A Co 1st Bn	B MORTAR GRID	01457805	C MORTAR ALT	250	D DATE	12 MAY 77
E OP GRID	5150	H OP GRID 1	01167716	I O.P. ALT 1	325	J RCT	-37
F DRIFT		G OP GRID 2	01557850	H O.P. ALT 2	400	K DEFL CORR	PL 13
G MT AZ	5150	I OP GRID 3	01637775	J O.P. ALT 3	300	L GRID INT	0180

NOTE: Section I of figure shown at bottom of page to correspond with text at top of page.

J RCF (range correction factor)

- Record the RCF that is applied to all targets within the transfer limits of the RP (surveyed chart only).

K DEFL CORR (deflection correction)

- Record the number and direction in mils applied to all targets within the transfer limits of the RP (surveyed chart only).

L GRID INT (grid intersection)

- Record the grid intersection to represent the grid square(s) on the M16 and M19 plotting boards where the firing unit is located.

DATA SHEET
For use of this form, see FM 23-81; the proponent agency is U.S. Army Training and Doctrine Command.

A ORGANIZATION <u>A Co 164</u>	B MORTAR GRID <u>01457805</u>	C MORTAR ALT <u>280</u>	D DATE <u>12 MAY 77</u>
E TYPE OF FIRE <u>5130</u>	H P. GRID 1 <u>01167816</u>	I O.P. ALT 1 <u>325</u>	J RCF <u>-37</u>
F DRIFT <u>—</u>	2 <u>01557850</u>	2 <u>400</u>	K DEFL CORR <u>R13</u>
G MZ AT <u>5150</u>	3 <u>01637875</u>	3 <u>300</u>	L GRID INT <u>0130</u>

I {

(M) TARGET IDENT (target identification)

1.) TGT NO (target number)

- Record the number assigned to the target.

2.) GRID

- Record the 6-digit or 8-digit coordinates of the target.

1.) DEFL (deflection)

- Record the chart deflection needed for the target.

2.) **RG/CHG** (range/charge)

- Record the range and the charge needed for the target.

O) FIRING CORRECTIONS

1.) DEFL CORR (deflection correction)

- Record the direction (left/right) and the number of the mils to apply to the chart deflection to engage the target.

[illegible]

NOTE: Use half the VI when applicable.

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NOTE: Section II of figure shown at bottom of page to correspond with text at top of page.

P) FIRING DATA

NOTE: This is the base gun command data for the targets. This information contains all corrections (when used) plus chart data to get the firing data (command data) to the center of mass of the target.

1.) DEFL (deflection)

- Record command deflection to hit the center mass of the target.

2. **RG/CHG** (range/charge)

- Record the command range and charge to hit the target.

3.) **ELEV** (elevation)

- Record the elevation used to fire the round.

NOTE: Use the elevation from the firing tables for the command range.

Q) INTELLIGENCE

1.) TIME FIRED

- Record the time the call-for-fire was received.

[illegible]

2.) TARGET DESCR (description)

3.) METH OF ENGMT (method of engagement)

4. SURVEILLANCE

II

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TASK: CONSTRUCT FIGHTING POSITION FOR DRAGON (G-0351-21.2/PVT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: Field Handling Trainer (FHT), tracker, sector of fire, a firing location, azimuth, entrenchment tools, and logs. Security has been posted.

STANDARD: The position must allow the gunner to engage targets to the front and to the oblique and be located so as not to endanger friendly personnel with the weapon's backblast. The hole must be shaped so that the gunner and assistant gunner have access to the weapon. This position and shape will protect from direct frontal small arms fire and the crushing action of tanks; it will blend well enough with the surroundings so that it cannot be detected from approximately 35 meters to the front. Training steps A and B must be performed sequentially. The fighting position should be completely prepared within approximately 4 hours, but this time limit will depend on environmental factors such as soil composition, availability of camouflage materials, or the topography of the terrain.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:**A. Prepare hasty position.**

- Locate a position behind some natural object on the terrain that affords you frontal protection from direction fire but also allows you to fire forward.

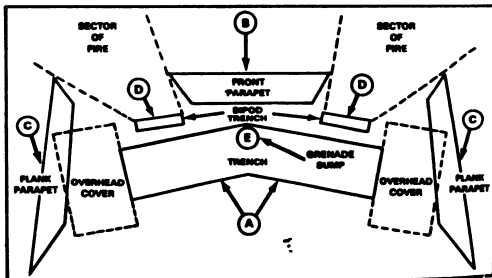
B. Emplace limiting stakes.

Place limiting stakes right and left to define your sector of fire and to preclude firing into an adjacent position.

NOTE: Care must be taken **NOT** to destroy the concealment of the position with limiting stakes.

C. Dig hole.

1. Dig a hole three M16's long and in an inverted V-shape, waist deep, and waist wide plus about 6 inches (A).
2. Construct the front parapet (B) so it is one M16 long, one M16 wide, and two helmets high while the flank parapets (C) are long enough to give good flank protection, one M16 wide and two helmets high.



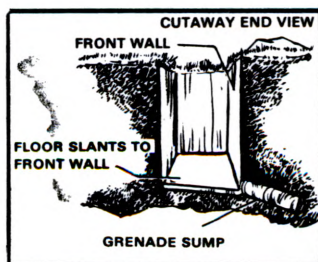
D. Dig bipod hole.

For each sector of fire, dig the bipod trench, (D), two helmets long, one helmet wide, and 6 inches deep, with the back of the bipod trench 4-6 inches forward of the main trench.

NOTE: There must be at least 6 inches of clearance between the muzzle of the Dragon and the ground when in position to fire.

E. Dig a grenade sump.

1. With your entrenching tool, dig a hole downward at an angle of about 45 degrees at the bottom of the wall toward which water will drain. (See (E) in the preceding illustration and see the accompanying illustration.)
2. Make the hole one entrenching tool length deep and one entrenching tool blade in diameter.



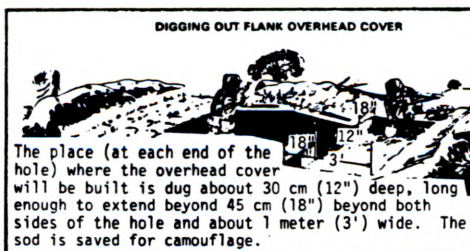
NOTE: If any hand grenades are thrown into the hole, the slant of the floor should channel them into the sump. The mouth of the sump should be smooth and wide enough to easily kick the grenades into.

F. Construct overhead cover.

NOTE: The overhead cover at each end should be large enough to provide protection for one man and any extra rounds.

1. Mark the position of the overhead cover by marking a rectangle one M16 wide by two M16's long at each end of the trench.
2. Dig out the soil within the marked area (saving any sod) to a depth of about 12 inches.

NOTE: The area dug out must extend at least 18 inches beyond each side of the trench, and about 3 feet wide.

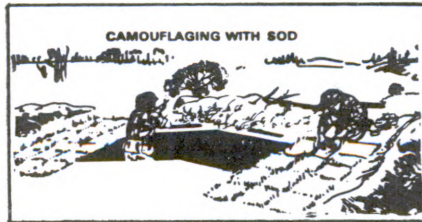


3. Place 4 to 6-inch thick logs or other supporting material into each hole.



4. Fill the remainder of the hole with dirt until it is about ground level.

- Use sod to cover the dirt.



5. Enter the trench.
6. Once in the trench, dig a cave-like hole under the logs or supporting material.

NOTE: When constructed, the flank parapets will partly cover the overhead cover.



NOTE: When you are able to fire the Dragon in only one direction, the position should have cover to the front and targets should be engaged from the flank.



G. Clear fields of fire.

1. Selectively clear and cut grass, crops, bushes, and trees.
2. Demolish buildings.
3. Cut fire lanes through thick woods.
4. Clear all obstacles that could possibly interfere with the command-link wire.

NOTE: You should avoid shooting over power lines or salt water.

H. Camouflage the position.

1. Cover or hide dirt with sod; make it look natural.
2. Arrange grass, leaves, brush, and other natural materials to conform to the area.
3. Put leaves, straw, or grass on the floor of your hole to reduce the contrast that the fresh earth has with the ground around the position from an aerial view.

RESOURCES:

FM 7-7, The Mechanized Infantry Platoon and Squad
FM 7-11B1, Soldier's Manual, Skill Level 1

TASK: ENGAGE TARGET WITH DRAGON (G-0351-21.3/PFC)**TRAINING OBJECTIVE 1**

BEHAVIOR: Simulate engaging target with field handling trainer (FHT).

CONDITIONS: Conditions are determined by mission requirements. You will be provided: FHT, tracker, and target. You will perform this task in sitting, kneeling, and standing-supported firing positions.

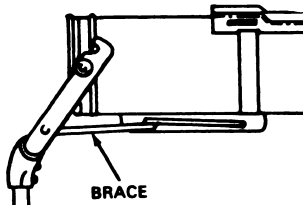
STANDARD: You must demonstrate correct sitting, kneeling, and standing-supported firing positions and weapon handling techniques.

BATTLE DRILL(S): 16**PERFORMANCE STEPS:****A. Prepare FHT for operation.**

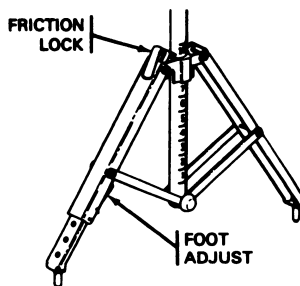
1. Prepare the round for firing.
 - a. To release the bipod:
 - Unsnap the bipod retainer strap.
 - Push the bipod forward to release and eject the forward shock absorber.



NOTE: Make sure that the forward bipod brace is engaged in the lock position.



- b. To extend the bipod legs and adjust the height:
 - Grasp the legs by the friction lock.
 - Push the legs down to number 4 or 5.
 - Release the lock.



2. Select a firing position that best meets your situation.

a. To assume a *SITTING* position:

CAUTION: DO NOT PUSH FORWARD ON BIPOD LEGS, BECAUSE THE BIPOD MAY COLLAPSE.

- Keep the legs of the bipod as straight as possible with your feet against the feet of the bipod.
- Hold the launcher on the meaty part of your shoulder and neck while you lean your body forward at the waist.

- Keep your right eye firmly in the eyepiece.
- Pull down and back on the tracker with steady pressure.

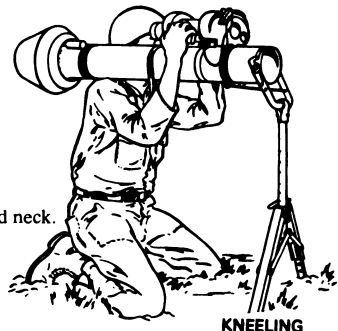


b. To assume a *KNEELING* position:

CAUTION: DO NOT PUSH TUBE FORWARD ON BIPOD LEGS, BECAUSE THE BIPOD MAY COLLAPSE.

- Place your knees on the ground spread outward at a convenient angle with your toes on the ground.
- Have your buttocks resting on the heels of your boots.
- Lean your body forward at the waist.

- Hold the launcher on the meaty part of your shoulder and neck.
- Keep your right eye firmly in the eyepiece.
- Pull down and back on the tracker with steady pressure.



c. To assume a *STANDING-SUPPORTED* position:

CAUTION: DO NOT PUSH FORWARD ON BIPOD LEGS, BECAUSE THE BIPOD MAY COLLAPSE.

- Spread your legs to a comfortable distance apart with your toes pointed outward.
- Lean your body forward against the wall of your position and keep your elbows tucked in.

- Keep your right eye firmly in the eyepiece.
- Pull down and back on the tracker with steady pressure.



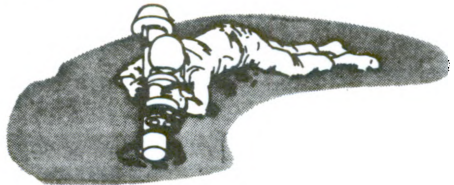
d. To assume a *PRONE* position:

WARNING: INJURY TO YOUR BACKSIDE AND LEGS MAY OCCUR IF THEY EXTEND INTO THE BACKBLAST AREA.

NOTE: The prone position is the least desirable. It is more difficult to track moving targets from this position.

Firing from ground level is NOT recommended due to round dropping approximately 18 inches within the first 65 meters.

- Rest the forward end of the launch tube on a dirt mound, a minimum of 6 inches high.
- Position your body at a near 90-degree angle to the tube with your elbows on the ground.



- Keep your right eye firmly in the eyepiece.
- Pull down and back on the tracker with steady pressure.

3. Remove the day tracker from the carrying bag:

NOTE: For purposes of illustration, the sitting position is used in the following example.

a. Pull the carrying bag flap open and hold it open with your right hand.

CAUTION: - DO NOT ATTEMPT TO LIFT THE DAY TRACKER USING THE SHOCK ABSORBERS AS HANDLES. THEY MIGHT TEAR OFF.

- DO NOT TOUCH THE LENSES! YOU CAN DAMAGE THEM BY JUST TOUCHING THEM WITH YOUR FINGERS.

- b. Reach in and grab the day tracker by the telescope barrel.

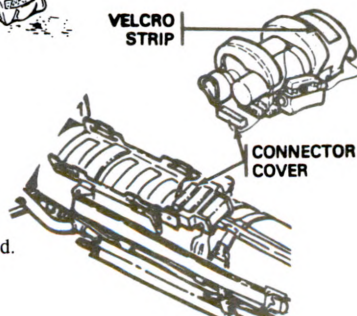
- c. Lift the day tracker from the bag.



- d. Pull the connector cover off the day tracker and stow it on the velcro strip on top of the forward shock absorber.

- e. Pull the connector cover off the round.

- f. Remove environmental covers from tracker and round.



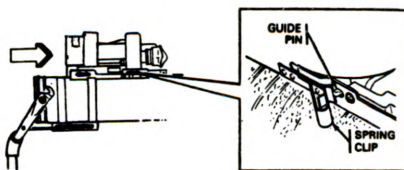
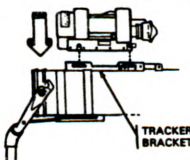
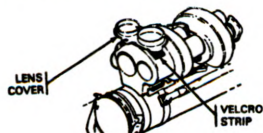
WARNING: BE CAREFUL NOT TO PRESS THE SAFETY AND TRIGGER WHILE MATING THE DAY TRACKER TO THE ROUND.

4. To mate the day tracker to the round:

- a. Place tracker guide pins in slots of tracker bracket guide rails.

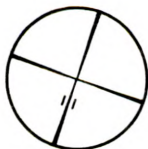
- b. Slide day tracker firmly to the rear using both hands, until the spring clip locks the guide pin in place.

- c. Remove the lens cover and stow it on the velcro strip on top of the front shock absorber.



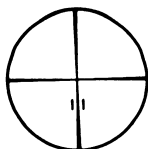
5. To adjust for height and a level sight picture:

- a. Look through the sight and if you see this...



- b. Adjust the bipod friction lock and foot adjusts, then...

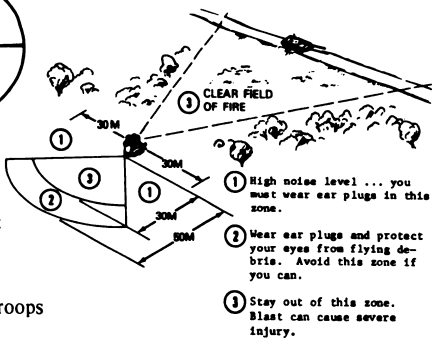
- c. If you see this, you have obtained a level sight picture.



6. To perform a final check, ensure:

- a. Danger zone is clear.

- Check to be sure no friendly troops are in zone ② or ③



NOTE: The area directly behind the launcher should be clear of obstructions and loose objects for at least 30 meters.

- b. Ears are plugged.

- c. Tracker is mated.

See Training Objective 1 - Prepare FHT for operation, Step 4.

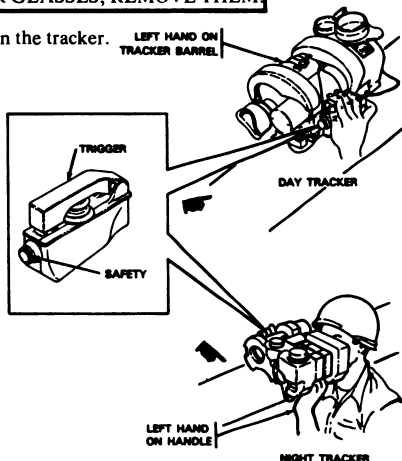
- d. Tracker lens cover has been removed.

See Training Objective 1 - Prepare FHT For Operation, Step 4.

7. Position your body into a good firing position.

WARNING: IF YOU WEAR GLASSES, REMOVE THEM.

8. Keep your hands placed correctly on the tracker.



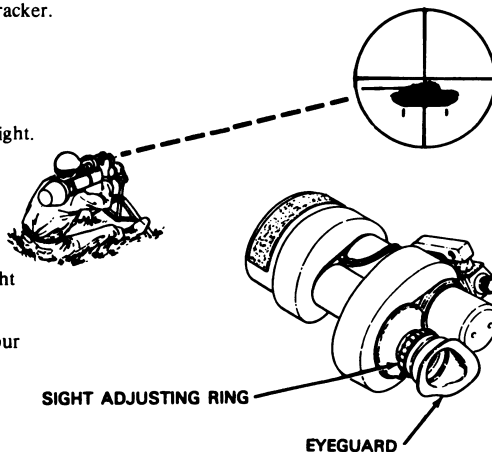
9. Pull down and back on the tracker.

B. Identify Target.

To identify the target:

1. Look at target through the sight.

2. Focus the sight using the sight adjustment ring.
3. Rotate the eyeguard to fit your face.



WARNING: DO NOT ENGAGE TARGETS AT LESS THAN 65 METERS. THE WARHEAD WILL NOT BE ARMED.

NOTE: A target 20 feet (6.09 meters) in length will completely fill the area between the stadia lines at maximum range (1,000 meters) and will exceed the stadia lines at a closer range.

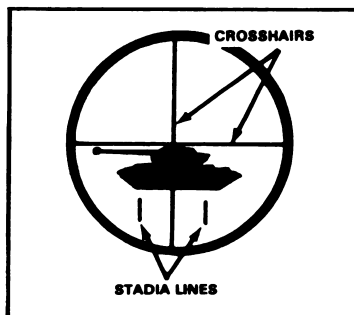
C. Determine if target is engageable.

After the target has been identified and acquired:

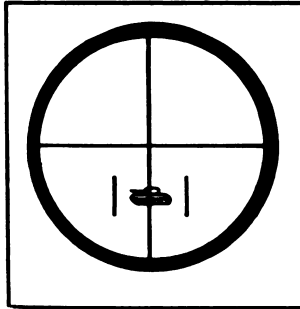
1. Evaluate the target to determine if it is within range.

- a. For flanking targets (full-stadia):

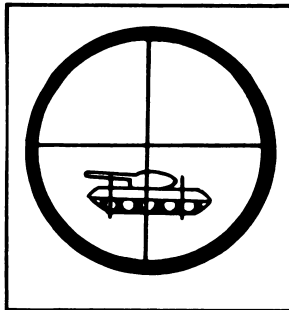
- Adjust the sight picture (by moving the launcher) to center the target between the stadia lines.



NOTE: If the target falls between the stadia lines, it is not within range.



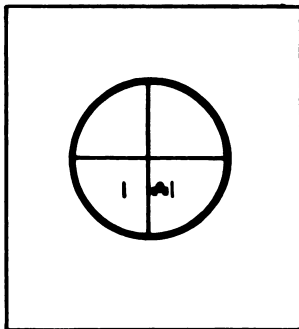
NOTE: If the target meets or exceeds the stadia lines, it is within range.



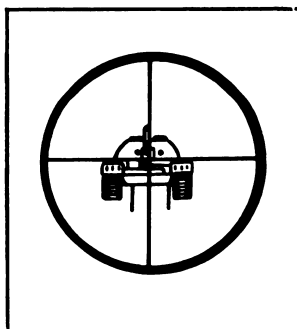
b. For targets moving toward or away from you (half-stadia):

- Adjust the sight picture to center the target between the vertical cross hair and one of the stadia lines.

NOTE: If the target falls between the vertical cross hair and stadia lines, the target is not in range.



NOTE: If the target meets or exceeds the vertical cross hair and one of the stadia lines, it is in range.



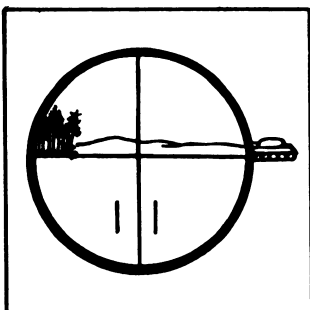
c. For oblique targets:

- Use the *full-stadia method* if you can see more of the side than the front.
- Use the *half-stadia method* if you can see more of the front than the side.

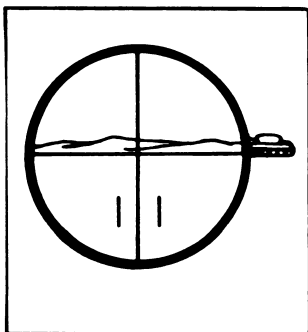
2. To determine if the target is engageable:

- a. Place the edge of the sight on the target and inspect the anticipated path of the vehicle to the opposite edge of the sight.

- b. If there is a covered area along this path, there is not enough time to fire and hit the target. The target is **NOT** engageable.



- c. If there are no covered areas, there is enough time to fire and hit the target. The target **IS** engageable.



D. Simulate tracking and firing.

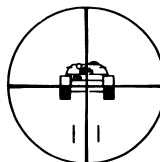
1. To track a moving target:
 - a. Center the cross hairs on the center of visible mass of the target.



FLANK



OBLIQUE

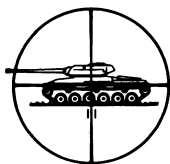


FRONT OR REAR

- Track the target for approximately 2 seconds prior to squeezing the trigger to establish a smooth tracking rate.

b. To track a stationary target:

- Center the cross hairs on the center of visible mass of the target until missile impact.

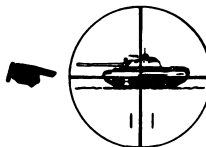


2. To fire the missile:

CAUTION: ALWAYS KEEP DOWNWARD AND REARWARD PRESSURE ON THE ROUND. DO NOT PUSH FORWARD AGAINST THE BIPOD; IT COULD COLLAPSE.

NOTE: Just before you squeeze the trigger, take a breath and HOLD IT! You must hold your breath until missile impact. Normal breathing causes your shoulder to move up and down. One-eighth inch movement at the shoulder can cause a miss of 2 meters at maximum range.

- a. Depress the safety and squeeze the trigger. Maintain cross hairs on center of visible mass until missile impact.



NOTE: - If you have a malfunction and your missile does not fire, take immediate action.

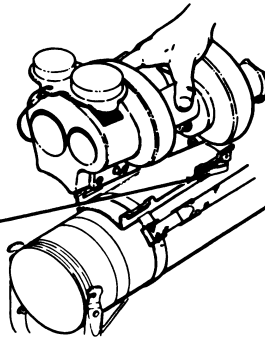
- When the missile appears in your sight picture **IGNORE IT!!!**
DON'T TRY TO FLY THE MISSILE.

- b. Keep the cross hairs on the target and let the tracker guide the missile.

c. After missile impact:

- Release the spring clip at rear left side of the tracker bracket assembly.

SPRING CLIP



- Slide the tracker forward and remove it.

WARNING: THE BATTERY AND REAR OF THE LAUNCH TUBE ARE HOT SO DO NOT TOUCH THEM.

E. Simulate destruction of expended launcher.

1. Destroy the tracker.

a. Use explosives.

- C4, TNT

b. Use gunfire.

- Shoot into the optical lens.

c. Burn it.

- Take anything flammable and pour it onto the tracker itself.

2. Destroy the round.

a. Use explosives.

- C4, TNT

b. Use gunfire.

- Use direct hits from a tank or artillery.

CAUTION: DO NOT ATTEMPT TO DESTROY DRAGON ROUND BY THE USE OF HAMMER, AXES, PICKS, OR OTHER MECHANICAL MEANS.

TRAINING OBJECTIVE 2

BEHAVIOR: Qualify with launch effects trainer (LET).

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a LET with tracker, infrared transmitter mounted on tactical vehicle, and M64 cartridges. The trainer is provided a monitoring set. You will perform this task in sitting, kneeling, and standing-supported firing positions using 20 cartridges in each position.

STANDARD: You must achieve a minimum of 14 hits out of 20 attempts on each of the qualification tables.

BATTLE DRILL(S): 16

PERFORMANCE STEPS:**A. Fire the LET according to the sequence in Table VIII.**

In the *SITTING* position, fire the LET according to the the following table for gunner qualification.

NOTE: Track all moving targets, with 1/2 moving from left to right and 1/2 moving from right to left.

Round Sequence	No. Rounds	Firing Position	Target Posture	Target Range	Monitor Set Range Setting	Target Speed (mph)
1	2	<i>Sitting</i>	Moving	450	2	25
2	2	<i>Sitting</i>	Moving	450	5	10
3	2	<i>Sitting</i>	Moving	450	5	10
4	2	<i>Sitting</i>	Moving	450	10	5
5	2	<i>Sitting</i>	Moving	450	10	5
6	2	<i>Sitting</i>	Moving	250	2	25
7	2	<i>Sitting</i>	Moving	250	5	10
8	2	<i>Sitting</i>	Moving	250	5	10
9	2	<i>Sitting</i>	Moving	250	10	5
10	2	<i>Sitting</i>	Moving	250	10	5

B. Fire the LET according to the sequence in the Table IX.

In the *STANDING* position, fire the LET according to the following table for gunner qualification.

NOTE: Track all moving targets, with 1/2 moving from left to right and 1/2 moving from right to left.

Round Sequence	No. Rounds	Firing Position	Target Posture	Target Range	Monitor Set Range Setting	Target Speed (mph)
1	2	<i>Standing</i>	Moving	450	2	25
2	2	<i>Standing</i>	Moving	450	5	10
3	2	<i>Standing</i>	Moving	450	5	10
4	2	<i>Standing</i>	Moving	450	10	5
5	2	<i>Standing</i>	Moving	450	10	5
6	2	<i>Standing</i>	Moving	250	2	25
7	2	<i>Standing</i>	Moving	250	5	10
8	2	<i>Standing</i>	Moving	250	5	10
9	2	<i>Standing</i>	Moving	250	10	5
10	2	<i>Standing</i>	Moving	250	10	5

C. Fire the LET according to the sequence in TABLE X.

In the *KNEELING* position, fire the LET according to the following table for gunner qualification.

NOTE: Track all moving targets, with 1/2 moving from left to right and 1/2 moving from right to left.

Round Sequence	No. Rounds	Firing Position	Target Posture	Target Range	Monitor Set Range Setting	Target Speed (mph)
1	2	<i>Kneeling</i>	Moving	450	2	25
2	2	<i>Kneeling</i>	Moving	450	5	10
3	2	<i>Kneeling</i>	Moving	450	5	10
4	2	<i>Kneeling</i>	Moving	450	10	5
5	2	<i>Kneeling</i>	Moving	450	10	5
6	2	<i>Kneeling</i>	Moving	250	2	25
7	2	<i>Kneeling</i>	Moving	250	5	10
8	2	<i>Kneeling</i>	Moving	250	5	10
9	2	<i>Kneeling</i>	Moving	250	10	5
10	2	<i>Kneeling</i>	Moving	250	10	5

TRAINING OBJECTIVE 3

BEHAVIOR: Engage target with DRAGON round.

- CONDITIONS:**
1. When firing your "first" round, you will be provided: DRAGON round, tracker, and a stationary target at a range of 750-900 meters. You will perform this task in either the sitting, kneeling, or standing-supported position during daylight.
 2. When firing your "second" round, you will be provided: DRAGON round, tracker, and a moving target at a range of 350-750 meters. You will perform this task in either the sitting, kneeling, or standing-supported position during daylight.
 3. When firing your "third" round, you will be provided: DRAGON round, night tracker, and a stationary target at a range of 500-800 meters. You will perform this task in either the sitting, kneeling, or standing-supported position during darkness.
 4. When firing your "fourth" and subsequent rounds, you will be provided: DRAGON round, night tracker, and a moving target at a range of 400-700 meters. You will perform this task in either the sitting, kneeling, or standing-supported position during darkness.

NOTE: If a Marine demonstrates exceptional proficiency during training, commanders are authorized to skip one level of firing and proceed to a more difficult one.

STANDARD: The round must hit the target.

BATTLE DRILL(S): 20, 28, 30

PERFORMANCE STEPS:

A. Conduct prefire inspection.

1. Ensure the danger zone is clear.

See Training Objective 1 - Prepare FHT for operation.

2. Ensure your ears are plugged.

See Training Objective 1 - Prepare FHT for operation.

3. Ensure tracker is mated.

See Training Objective 1 - Prepare FHT for operation.

4. Ensure tracker lens cover is removed.

See Training Objective 1 - Prepare FHT for operation.

B. Prepare DRAGON for firing.

See Training Objective 1 - Prepare FHT for operation.

NOTE: Installation of night tracker is the same as the day tracker.

C. Identify target.

See Training Objective 1 - Identify target.

D. Determine if target is engageable.

See Training Objective 1 - Determine if target is engageable.

E. Fire and track target.

See Training Objective 1 - Simulate tracking and firing.

F. Dispose of expended launcher.

See Training Objective 1 - Simulate destruction of expended launcher.

RESOURCES:

TM 9-1425-484-10, Dragon Weapon Guided Missile System, Surface Attack: M47
MCI 03.56c, Dragon Weapon System Crewman
FM 7-11B1, Soldier's Manual, 11b - Infantryman (Skill Level 1)

TASK: TAKE IMMEDIATE ACTION (DRAGON) (G-0351-21.4/PFC)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a FHT, a tracker, and a constructive misfire situation. This task may be performed in the field or in a classroom.

STANDARDS: Within 2 minutes, you will demonstrate and/or explain how to take immediate action for a cold or hot battery.

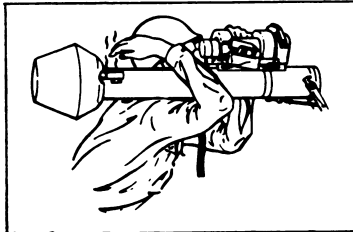
BATTLE DRILL(S): 16, 20

PERFORMANCE STEPS:**A. Announce either "hangfire" or "misfire."**

NOTE: A hangfire is an unexpected delay in the functioning of a series of ammunition components. A hangfire may occur anywhere in a series of events from pressing the firing trigger to gas pressure generator ignition. The amount of delay is unpredictable and may vary from a fraction of a second to several minutes. The danger of a hangfire is that it may be mistaken for a misfire.

A misfire (complete failure to fire) occurs if the gas pressure generator fails to ignite after the trigger has been depressed. A misfire is dangerous because it cannot readily be distinguished from a hangfire. ANY failure to fire should be considered a hangfire until such a possibility is eliminated.

1. Immediately resqueeze the trigger after the Dragon has failed and continue tracking the target for 15 seconds.
2. Squeeze the trigger again.
3. Keep the target in sight for 15 seconds.

B. If the round still has not fired, cautiously feel near the tracker thermal battery with right hand.

WARNING: IN A NONCOMBAT SITUATION, WAIT 5 MINUTES BEFORE GOING ON TO STEP 1.

1. If tracker thermal battery is HOT, do the following:

NOTE: If your tracker thermal battery is hot, you may have a hangfire.

- a. Remove tracker from the launcher.
- b. Place launcher on the ground, away from the firing position.

- Keep the launcher pointed toward the enemy.
 - Advise troops in the vicinity of the misfire.
 - c. Mount tracker on a new launcher.
 - d. Obtain another round.
 - e. Continue the mission.
 - f. Notify your supervisor.
2. If the tracker thermal battery is **COLD**, do the following:

NOTE: If the tracker thermal battery is cold, you have a misfire.

- a. Loosen the tracker and then remount it to the round.
- b. Track your target and attempt to fire again.

NOTE: If the launcher again fails to fire, **CAUTIOUSLY** feel near the tracker thermal battery. If the battery is hot, go back to "B", step 1.

- c. Remove tracker and place launcher on the ground away from the firing position if the battery is still **COLD**.
 - Keep the launcher pointed toward the enemy.
 - Advise friendly troops in the vicinity of the misfire.
- d. Mount tracker on new launcher.
- e. Obtain another round.
- f. Continue the mission.

NOTE: If new launcher also fails to fire, **CAUTIOUSLY** feel near the tracker thermal battery. If the battery is cold, the tracker is probably defective. Replace tracker and continue mission using previously unfired launchers.

RESOURCES:

TM 9-1425-484-10, Dragon Weapon Guided Missile System, Surface Attack: M47
TEC 948-071-0149-F, Dragon Malfunctions and Destruction

TASK: ENGAGE TARGET WITH SMAW (G-0351-22.3/PVT)**TRAINING OBJECTIVE 1**

BEHAVIOR: Engage target with SMAW trainer and noise simulator.

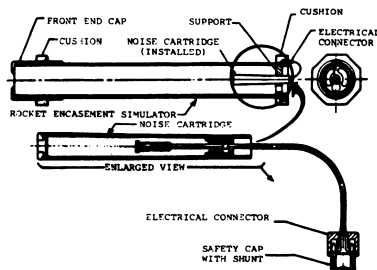
CONDITIONS: Conditions are determined by mission requirements. You will be provided: SMAW launcher, 1 magazine with 6 tracer cartridges, trainer, noise simulator, suitable firing range and a stationary target (1m x 2m, long side parallel to ground at a range of 150m to 250m).

STANDARD: You must hit the target with a minimum of 2 consecutive tracer rounds.

BATTLE DRILL(S): 16,21

PERFORMANCE STEPS:**A. Install noise simulator in trainer.**

1. Insert noise cartridge into the rear end of the assault rocket trainer and—
2. Plug the electrical connector into the tube.

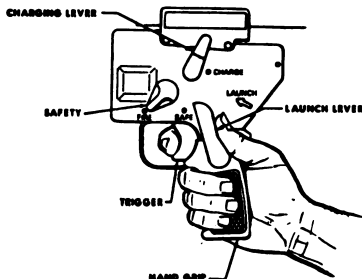
**B. Mate trainer to launcher.**

1. Drop to a comfortable position with the rocket launcher across your left upper leg and have the firing mechanism in the UP position.



WARNING: WHILE LOADING OR UNLOADING THE LAUNCHER ALWAYS KEEP MUZZLE POINTED DOWNRANGE.

2. On the firing mechanism, place the **SAFETY LEVER** to **SAFE**.
3. Make certain the charge lever is out of the **CHARGE** position.



NOTE: If the charge lever is in the **CHARGE** position, depress the **LAUNCH** lever and squeeze the trigger (dry fire); keep **LAUNCH** lever depressed when squeezing the trigger.

4. Remove the front end of the cap from the rocket encasement by turning it counterclockwise approximately 1/4 of a turn.
5. Insert the encasement into the launcher and rotate it clockwise until it locks firmly in place (mechanical interface).

C. Load spotting rifle with tracer cartridges.

1. Remove the spotting rifle magazine from the forward end cap.
2. Insert the magazine into the magazine well of the spotting rifle and be sure the magazine is locked in place.
3. Cock and load the spotting rifle by pulling the cocking lever to the rear and releasing it.

D. Set estimated target range on sight mount.

1. **ESTIMATE** the range to the target.
2. **CHOOSE** an aim point.
3. **SET** the estimated range on the sight range selector drum.
4. **AIM** by placing the cross hair of the telescope on the center of mass (base) of the target.
5. Place the charging lever in the **CHARGE** position.
6. Maintain sight picture.
7. Place safety lever on "fire."

E. Fire spotting rifle and observe point of impact.**IF:****DO THE FOLLOWING:**

Point of impact was over target

Decrease the range.

Point of impact was short of target

Add to the range.

Over/short error was large

Make a change in the range setting by rotating the range drum 50 meters from the original range setting.

Over/short error was small

NOTE: You may not want to make a range drum adjustment.

Fire another spotting cartridge to see if the "group" is centered on the target.

NOTE: A "group" is when all bullets will not go through the same hole due to some dispersion of the individual bullets.

"Group" is too high or low

Introduce "Kentucky Windage"

NOTE: "Kentucky Windage" is when you move your aim point in the same direction up, down, left or right which you want the "group" to move in order to get on target center.

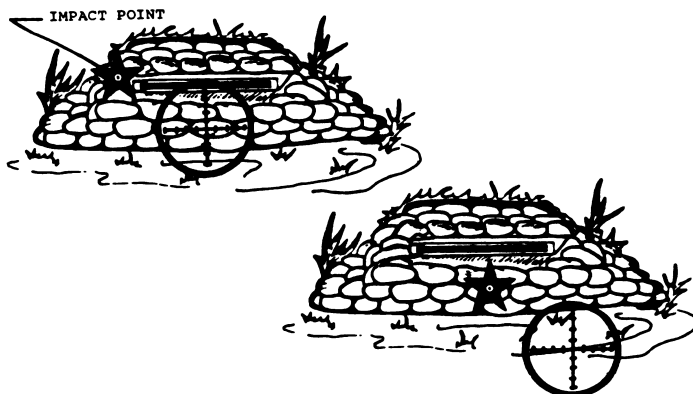
"Group" is to the right or left

Introduce "Kentucky Windage."

F. Continue to fire spotting rifle until at least 2 consecutive spotting rounds hit the target.

While firing the spotting cartridges:

1. Adjust the point of aim so the spotting bullets group onto the target, if necessary.



2. Pay attention to windage (right/left errors).

- If windage exists, you must make all corrections by shifting your aim left or right because there is **NO** windage knob or adjustment on the sight.

G. Fire noise simulator.

When you are confident that your group is centered on the target:

- Maintain sight picture,
- Select the “**LAUNCH**” mode, and
- Fire the SMAW rocket noise simulator.

TASK: ENGAGE TARGET WITH SMAW, TACTICAL ROUND (G-0351-22.3/PVT)

TRAINING OBJECTIVE 2

BEHAVIOR: Engage target with SMAW tactical round.

CONDITIONS: Conditions are determined by mission requirements. You will be provided: SMAW launcher, 1 magazine with 6 tracer cartridges, encased tactical round, suitable firing range, a stationary target (1m x 2m, long side parallel to ground), at a range of 150m to 250m .

STANDARD: You must hit the target with tactical round.

BATTLE DRILL(S): 16,21

PERFORMANCE STEPS:

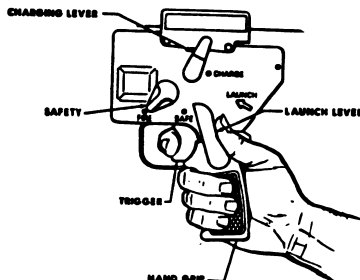
A. Mate enclosed tactical round to launcher.

1. Drop to a comfortable position with the rocket launcher across your left upper leg and have the firing mechanism in the UP position.



**WARNING: WHILE LOADING OR UNLOADING THE LAUNCHER
ALWAYS KEEP MUZZLE POINTED DOWNRANGE.**

2. On the firing mechanism, place the SAFETY LEVER to SAFE and make certain the charge lever is out of the CHARGE position.



NOTE: If the charge lever is in the **CHARGE** position, depress the **LAUNCH** lever and squeeze the trigger (dry fire); keep **LAUNCH** lever depressed when squeezing the trigger.

3. Remove the front end of the cap from the rocket encasement by turning it counterclockwise approximately 1/4 of a turn.
4. Insert the encasement into the launcher and rotate it clockwise until it locks firmly in place.

B. Load spotting rifle with tracer cartridges.

1. Remove the spotting rifle magazine from the forward end cap.
2. Insert the magazine into the magazine well of the spotting rifle; be sure the magazine is locked in place.
3. Cock and load the spotting rifle by pulling the cocking lever to the rear and releasing it.

C. Set estimated target range on sight mount.

1. **ESTIMATE** the range to the target.
2. **CHOOSE** an aim point.
3. **SET** the estimated range on the sight range selector drum.
4. **AIM** by placing the cross hair of the telescope on the center of mass of the target.
5. Place the charging lever in the **CHARGE** position.
6. Maintain sight picture, place safety lever on "fire."

D. Fire spotting rifle and observe point of impact.

IF:

DO THE FOLLOWING:

Point of impact was over target

Decrease the range.

Point of impact was short of target

Add to the range.

Over/short error was large

Make a change in the range setting by rotating the range drum 50 meters from the original range setting.

Over/short error was small

NOTE: You may not want to make a range drum adjustment.

Fire another spotting cartridge to see if the "group" is centered on the target.

NOTE: A "group" is when all bullets will not go through the same hole due to some dispersion of the individual bullets.

"Group" is too high or low

Introduce "Kentucky Windage."

NOTE: "Kentucky Windage" is when you move your aim point in the same direction up, down, left or right which you want the "group" to move in order to get on target center.

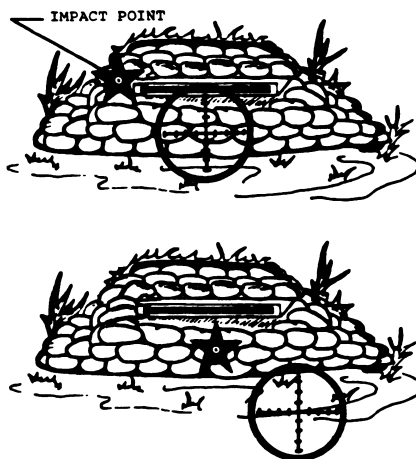
"Group" is to the right or left

Introduce "Kentucky Windage"

E. Continue to fire spotting rifle until at least 2 consecutive spotting rounds hit the target.

While firing the spotting cartridges:

1. Adjust the point of aim so the spotting bullets group onto the target, if necessary.



2. Pay attention to windage (right/left errors).

- If windage exists, you must make all corrections by shifting your aim left or right since there is **NO** windage knob or adjustment on the sight.

F. Fire tactical round.

When you are confident that your group is centered on the target:

- Maintain sight picture.
- Select the "LAUNCH" mode, and
- Fire the tactical round.

RESOURCES:

Gunner Instructor Training Student Training Guide
 TM 11-5855-213-10, Operator's Manual for Night Vision Sight, Individual Served
 Weapon AN/PVS-4

TASK: ENGAGE TARGET WITH SMAW USING NIGHT VISION SIGHT (G-0351-22.5/PFC)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a SMAW launcher, night vision sight, 1 encased rocket, 1 magazine with six 9mm spotting rounds; a firing range, and a target within range.

STANDARD: You must achieve a minimum of two consecutive spotting round hits on target prior to firing the rocket. The rocket must hit the target.

BATTLE DRILL(S): 16, 21

PERFORMANCE STEPS:

A. Mount night vision sight.

1. Remove the telescope sight.
2. Fasten the night vision sight, AN/PVS-4, to the sight mount.

B. Mate encased rocket to launcher.

1. Drop to a comfortable position with the rocket launcher across your left upper leg, making certain the firing mechanism is in the **UP** position.
2. Place the **SAFETY LEVER** to **SAFE** on the firing mechanism and make certain the charge lever is not in the **CHARGE** position.

NOTE: If charge lever is in the **CHARGE** position, depress the **LAUNCH** lever and squeeze the trigger.

3. Remove the front end cap from the rocket encasement by turning it counterclockwise approximately 1/4 of a turn.
4. Insert the rocket encasement into the launcher and rotate it around until it locks firmly into place.

WARNING: WHILE LOADING OR UNLOADING THE LAUNCHER, ALWAYS KEEP MUZZLE POINTED DOWN RANGE.

C. Load magazine with 9mm spotting rounds.

1. Remove spotting rifle magazine from forward end of cap rocket encasement.
2. Insert magazine into magazine well of the spotting rifle, making sure the magazine is locked into place.
3. Cock and load the spotting rifle by pulling the cocking lever to the rear and releasing it.

D. Set estimated range on sight mount.

1. **ESTIMATE** range to the target.
2. **SET** the estimated range on the sight range selector drum.

E. Turn on night vision sight.

1. Locate the target in the sight.
2. Place the target in the proper reticle pattern in the sight using the estimated range.
3. Place the charging lever in the **CHARGE** position.
4. While maintaining sight picture, place safety lever on "fire."

F. Fire spotting rifle and observe point of impact of spotting rounds (tracers).

1. Fire spotting rifle.
2. Observe point of impact of spotting rounds (tracers).
3. Determine the following:

- a. *Was the point of impact over or short of the target?*

NOTE: If error is over the target, decrease the range; if error is short of the target, add to the range.

- b. *Was there any drift to the right or left of the target because of wind?*

4. If you answered yes to one or both of the preceding questions, adjust the aim point accordingly by selecting one of the following:

- a. If the over/short error was large:

- Rotate the range drum 50 meters from the original range setting to make a change in the range setting.

- b. If the over/short error was small:

- You may not want to make a range drum adjustment.

- You may want to fire another spotting cartridge to see if the "group" is centered on the target.

NOTE: A "group" is when all bullets will not go through the same hole due to some dispersion of the individual bullets.

- c. If you think the "group" is too high or too low:

- Introduce "Kentucky Windage."

NOTE: "Kentucky Windage" is when you move your aim point in the same direction (up, down, left, or right) in which you want the "group" to move in order to get on target center.

G. Continue to fire spotting rifle until at least two consecutive spotting rounds hit the target.

While firing the spotting cartridges:

1. If necessary, adjust the point of aim so the spotting bullets group onto the target.
2. Pay attention to windage (right/left errors).

- If windage exists, make all corrections by shifting your aim left or right since there is

H. Fire encased rocket.

When you are confident that your group is centered on the target:

1. Maintain sight picture.
2. Select the “LAUNCH” mode.
3. Fire the tactical round.

RESOURCE:

Gunner Instructor Training Student Training Guide

TASK: SELECT TOW FIGHTING POSITIONS (G-0352-23.3/Cpl)

CONDITIONS: Conditions are determined by mission requirements. The Marine being evaluated, acting as a TOW squad leader, is provided: a designated sector to be defended and a mission.

STANDARD: The Marine will select:

1. A primary position offering the best fields of fire.
2. An alternate position that covers the same sector of fire.
3. A supplementary position from which to engage targets outside the primary sector of fire.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:

A. Select position from which the entire designated sector can be observed.

NOTE: The primary position is the position from which the primary mission can be carried out.

An alternate position is a position from which the primary mission can be accomplished if the primary position can no longer be occupied.

A supplementary position is a position from which missions other than the primary mission can be accomplished. Supplementary positions are usually established to give depth and all-around security.

B. Choose a position which allows for engagement of targets at the greatest possible range.

NOTE:- The maximum range of the TOW 2 is 3,750 meters.

C. Check cover for weapon and crew.

- Choose a position that provides natural cover and concealment for the weapon and crew.

- If you have to improve the cover of the position:

1. Add overhead cover for the crew and missile system

— or —

2. Construct an artificial parapet if time and situation permit.

D. Select position so it can be concealed from ground and air observation.

NOTE: If your position is under a bush, tree, or in a building, you are less likely to be spotted from above.

Choose a position that:

1. Provides maximum concealment of the weapon signature.
2. Offers weapon defilade.
3. Requires the least amount of effort, if any, to clear the fields of fire.

E. Check mask clearance.

NOTE: Make certain there is nothing overhead that could interfere with the command-link wire.

F. Check to see that position permits flanking fire.

NOTE: Flanking fire is highly desirable, because a tank is most vulnerable from the flank. The flanking engagement offers a larger target; a tank can easily be surprised because of its limited visibility.

G. Check to see that backblast area is or can be cleared.

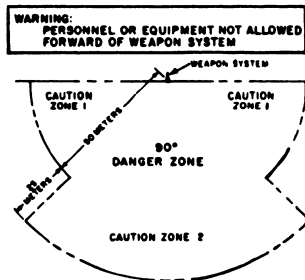


Diagram of Backblast Area

RESOURCES:

FM 7-7, The Mechanized Infantry Platoon and Squad
MCI Course 03.55b, The TOW 2 Weapon System Crewman

TASK: ENGAGE TARGET WITH TOW (G-0352-23.6/PFC)

TRAINING OBJECTIVE 1

BEHAVIOR: Qualify with M70 TOW Training Set

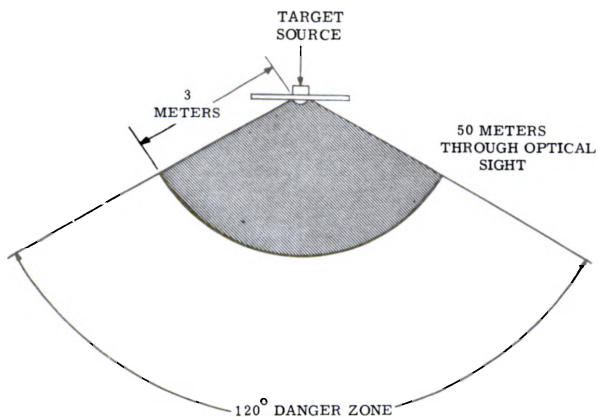
CONDITIONS: Conditions are determined by mission requirements. You, as the gunner being evaluated, will be provided: ground-or vehicle-mounted M70, Missile Simulation Round (MSR), 30 blast simulators and target set.

STANDARD: The Marine must fire Table VII, TOW qualification, achieving a minimum score of 550 in Tasks A and C and 750 in Task B, in order to qualify.

BATTLE DRILL(S): 16, 20

PERFORMANCE STEPS:

CAUTION: Stay clear of eye damage zone (infrared source of target board). Safe distances are: 3 meters for the naked eye and 50 meters through optical sight.



NOTE: DANGER ZONES EXTEND THROUGH ELEVATION ANGLE OF 45°.

A. Prepare M70 training set for operation.

NOTE: Steps 1 through 3 pertain to the following illustration of the instruction console.

1. Connect the instructor console cable to TOW.

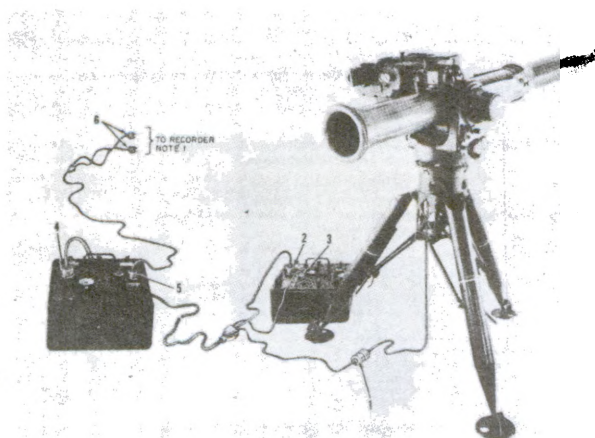
- Connect the instructor console cable "W1J1" to the weapon system coil cord connector "1."

- Connect the instructor console cable "W1P1" to the "J1" on the missile guidance set "2."

- Connect the instructor console cable "W1P2" to the "J2" on the missile guidance set "3."

2. Connect instructor console cable to the instructor console.

- Connect the instructor console cable "W1P3" to the "J1" on the instructor console "4."



- | | |
|-------------------------------------|-----------------------------------|
| 1. W1J1/coil cord connector. | 4. W1P3/J1 on instructor console. |
| 2. W1P1/J1 on missile guidance set. | 5. W2P2/J2 on instructor console. |
| 3. W1P2/J2 on missile guidance set. | 6. W2P1 and W2P3. |

(M70 Training Set, Instruction Console)

3. Load the missile simulation round.

CAUTION: DO NOT stand directly behind or in front of the weapon system during or after missile simulation round loading.

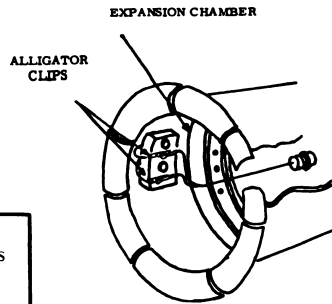
- Place the elevation and azimuth locks in the LOCKED position.
- Raise the bridge clamp.
- Lift the quick release handle and remove the forward handling ring and clamp from the missile simulation round.
- Clear the backblast area.
- Ensuring that the electrical connector is on top, insert the missile simulation round lugs into the launch tube indexing slots.
- Slide the missile simulation round forward and down until the lugs are seated firmly at the bottom position.
- Lower the aft (back) end of the missile simulation round into the launch tube breech.
- Ensuring that the missile simulation round is properly seated, lower the bridge clamp and secure the missile simulation round in the launch tube by pulling the bridge clamp locking handle back and down to the locked position.

NOTE: DO NOT raise the arming lever until the blast simulator has been loaded and a target has been selected.

4. Load the blast simulator.

- Untwist the 2 wire leads and split the wires about 1 to 2 inches apart.
- Insert the simulator well into the aft end of the missile simulation round.
- Connect the 2 wires to the alligator clips located on an insulation block in the aft end.

CAUTION: The 2 exposed ends of the wire must NOT touch. This will short the circuit causing misfires.



5. Perform the following checkout procedure for the instructor console.

NOTE: To perform this checkout, the instructor console must be connected to the weapon system and a missile simulation round loaded.

Procedure	Normal indication	Corrective action
a. <i>24V Power Check.</i> - Close power supply/modulator 24 VDC 40A INPUT circuit breaker CB1.	<i>Operating range</i> meter reads within band	Replace target source. Repeat this procedure. If problem persists, replace power supply/modulator.
b. <i>Lamp Check.</i> - Set LAMP START switch to ON.	LAMP MOD indicator reads ON.	Replace lamp assembly.
c. <i>BATTERY Check.</i> - Set instructor console MODE switch to BATT COND. - Release MODE switch when test is completed.	Instructor console BATTERY/SCORE meter reads in green band of BATTERY scale.	Replace instructor console battery with a charged one.

NOTE: For the following test, the bridge clamp must be closed and the arming lever must be in the armed position. If normal indications are not obtained, perform the actions called for in corrective action column. If trouble persists in steps "d" through "f," retest missile guidance set and instructor console battery assemblies.

Procedure	Normal indication	Corrective action
<i>p. 4 of 19</i>		
d. Timing Check.		
- Set instructor console RANGE switch to HIGH RATE QUALIFY or LOW RATE QUALIFY. Set mode switch to QUALIFY.	RDY flag appears in line-of-sight indicator after 7 seconds.	Replace instructor console.
- Set instructor console MODE switch to PRACTICE.	RDY flag appears in line-of-sight indicator after 7 seconds	Replace instructor console.
e. Boresight Check.		
- Set missile guidance set SELF-TEST SWITCH to position 7.	Both missile guidance set SELF-TEST METERS read within acceptance bands and crossbars approximately, centered on LOS meter.	Adjust optical sight boresight knobs for centering of crossbars on LOS meter and in band readings on missile guidance set SELF-TEST METERS.
- Set instructor console MODE switch to QUALIFY.		
- Hold missile guidance set TEST-OPERATE switch to TEST throughout step.		
f. ERROR Check.		
- Set missile guidance set SELF-TEST SWITCH to unmarked position.	L EXC flag appears, SCORE meter goes to zero, horn activates and line-of-sight pointers go off scale.	Replace instructor console.
- Set instructor console PYRO ENABLE switch to OFF and RANGE switch to LOW RATE QUALIFY.		
- Verify that the missile simulation round is in launch tube, bridge clamp is locked, and arming lever is raised.		
- Set instructor console MODE switch to QUALIFY.		
- Wait for RDY flag to appear.		

- Sight the lower left-hand corner of the target board with target source operating at a range of 500 to 750 meters.

- Depress launch trigger.

NOTE: The instructor console SCORNING switch must be momentarily turned to RESET before repeating error check. The bridge clamp must be momentarily opened to turn off the missile guidance set.

CAUTION: When the instructor console RAPID FIRE switch is in the ON position, opening the bridge clamp does not remove launcher power. The RAPID FIRE switch must be returned to the OFF position and the bridge clamp opened and allowed to remain open until the instructor console MODE switch is returned to the OFF position. Excessive battery assembly drain will occur if this sequence is not followed.

g. RAPID FIRE Switch.

- Set instructor RAPID FIRE switch to ON, PYRO ENABLE switch to OFF, and RANGE switch to LOW RATE QUALIFY.

Optical sight continues to run when bridge clamp is opened with RAPID FIRE switch set to ON.

Replace instructor console.

-Verify that the missile simulation round is in the launch tube, bridge clamp is locked, and arming lever is raised.

-Set instructor console MODE switch to QUALIFY.

-Wait for RDY flag to appear.

-Depress launcher trigger.

-Open bridge clamp while observing indication.

-Close bridge clamp.

Power goes off when RAPID FIRE switch is set to OFF

Replace instructor console.

-Set RAPID FIRE switch to OFF.

Procedure	Normal indication	Corrective action		p. 6 of 19
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- Open bridge clamp.
- Set MODE switch to OFF while observing indication.

h. LOS Meter Check.

- | | | |
|--|--|------------------------------------|
| <ul style="list-style-type: none"> - Set instructor pyro enable switch to off, rapid fire switch to off, range switch to high rate qualify or low rate qualify. - Verify that the missile simulation round is in the launch tube, bridge clamp is locked, and arming lever is raised. - Set missile guidance SELF-TEST SWITCH to unmarked position and instructor console MODE switch to QUALIFY. - Sight a stationary operating target source at a range of 500 to 750 meters, tracking steadily. - Set instructor console SENSOR switch to TARGET ACQ. - Release SENSOR switch and turn MODE switch to OFF. - After observing indications, momentarily open bridge clamp to deenergize the equipment. | <p>Optical sight tracker motor audible. Line-of-sight indicator cross-bars respond to tracking variations as long as sensor switch is set to target ACQ.</p> | <p>Replace instructor console.</p> |
|--|--|------------------------------------|

6. Perform the battery assembly check.

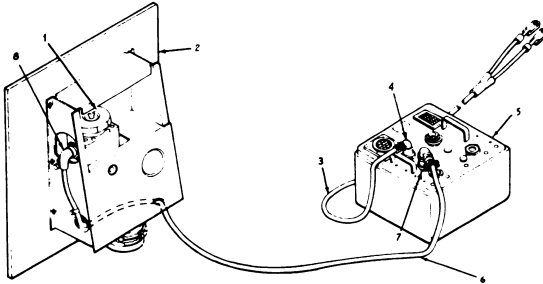
NOTE: Perform this check AFTER the instructor console has been set up for operation.

- Rotate and hold the mode switch to BATT COND position.

- Observe that the SCORE and BATTERY meter reads in the acceptable (green) portion of the BATTERY band.
- Return the MODE switch to the OFF position.

7. Install the target set.

NOTE: Before the target set can be installed on the truck, the TOW must be dismantled.



- | | |
|--------------------------------------|--------------------------------------|
| 1. Target source | 5. Power supply/modulator |
| 2. Target board | 6. Target source cable W1 |
| 3. Power (battery) cable W2 | 7. W1P1/J1 on power supply/modulator |
| 4. W2P1/J3 on power supply/modulator | 8. W1P2/target source connector |

(M70 Target Board Set)

- Mate and secure the target board adapter to the "M232E1" mount pedestal.

NOTE: The coupling clamp on the mount will secure the target board.

- Secure the power supply/ modulator in the bracket where the missile guidance set is normally secured.
- Use the straps on the bracket to ensure that the power supply/modulator is well-secured.
- Connect the target source cable "W1P2" to the connector on the target source and "W1P1" to connector "J1" on the power supply/modulator.
- Connect the power (battery) cable.

NOTE: Do NOT disconnect the vehicle battery cables.

- Set the 24 VDC 40A INPUT circuit breaker CBI and the LAMP START switch on the power supply/modulator to OFF.

- Connect "W2P1" on the power cable to connector "J3" (24 VDC INPUT) on the power supply/modulator.

CAUTION: When connecting the cable to the battery, observe polarity as instructed.

- Connect the negative (-) lug on the cable to the negative (-) terminal on the battery.
- Connect the positive (+) lug on the cable to the positive (+) terminal on the battery.

WARNING: Do NOT short battery terminals to the vehicle or dangerous arcing will occur.

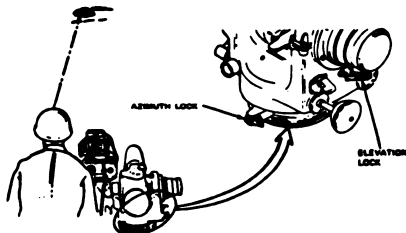
B. Determine if target is engageable.

NOTE: Preparation to fire the missile is the same for the ground-mounted system as it is for the jeep launcher.

After the encased missile is loaded:

1. Visually select the target without using the day sight tracker or night sight.

- Place the elevation and azimuth lock in the UNLOCKED position.

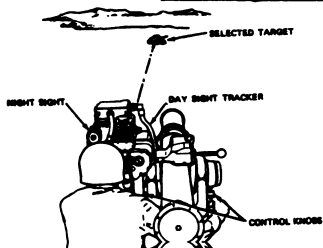


NOTE: If you are going to be firing during darkness or through smoke, the ON/OFF/STBY switch on the night sight should be on standby.

WARNING: Remove glasses (if worn) before looking into the day sight tracker or night sight. Do not look at the sun or extremely bright lights through the day sight tracker. (Serious eye damage can occur if too much light is seen through the day sight tracker.)

2. Look through the day sight tracker or night sight.

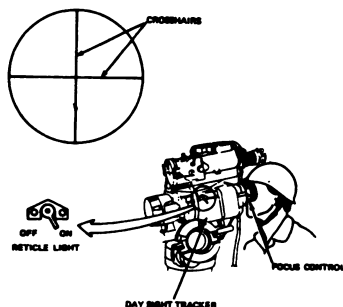
- Turn the control knobs to point the day sight tracker/night sight in the general direction of the selected target.



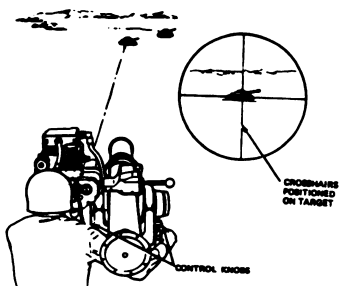
NOTE: It is best to locate the target with the day sight tracker and fire using the night sight. The battlefield can be obscured by smoke, dust, etc., during daylight. The night sight allows continuous observation of the target. Use the night sight during periods of limited visibility.

3. Adjust the focus control on the day sight tracker until the cross hairs are in focus.

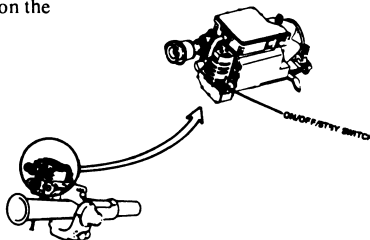
- Set the RETICLE LIGHT switch to ON if you need to see the cross hairs more clearly.



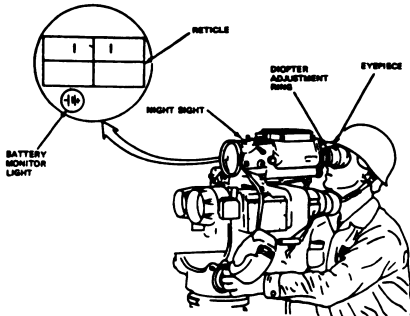
4. Turn the control knobs until the cross hairs are positioned on the target.



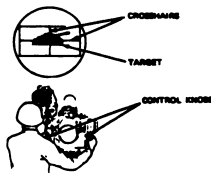
5. Set the ON/OFF/STBY switch on the night sight to ON.



6. Look through the eyepiece of the night sight.
 - Turn the DIOPTER ADJUSTMENT RING to focus the reticle, and
 - Check to see that the battery monitor light is off.



7. Set the FIELD-OF-VIEW selector to WFOV, and adjust the RANGE FOCUS, CTRS, and BRT controls, as necessary.
 - Set the FIELD-OF-VIEW selector to NFOV, and adjust the RANGE FOCUS, CTRS, and BRT controls, as necessary.
8. Select the day sight tracker or night sight (whichever gives you the better target image, depending upon battlefield visibility).
 - Turn the control knobs to keep cross hairs on the center of the target.



C. Fire and track target.

NOTE: Before firing be aware of the following:

- A moving target may be able to find a covered position to protect it from the missile.
- If there is no obstruction or covered area along the expected path of the target and the target is moving 35 mph or less, you can successfully launch the missile and destroy the target.

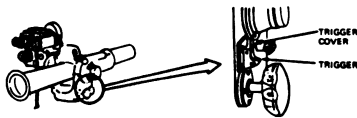
Follow the below procedures for firing the missile when using either the day sight tracker or night sight.

NOTE: Make certain the bridge clamp locking handle is fully DOWN and LOCKED before firing; the command-link wires may be cut at firing if the locking handle is not fully locked.

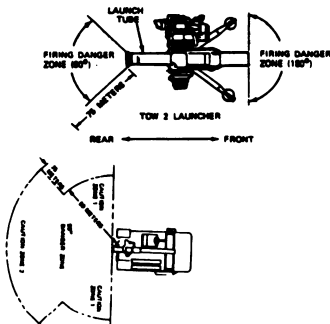
1. Line up the cross hairs on the center of the visible mass of the target.
2. Raise the arming lever.

NOTE: When the arming lever is raised, the encased missile is electrically connected to the launcher.

3. Raise the trigger cover to expose the trigger.



NOTE: Ensure that all personnel are out of the firing danger zones before pressing the trigger.



4. Push the trigger in to "launch" the missile.

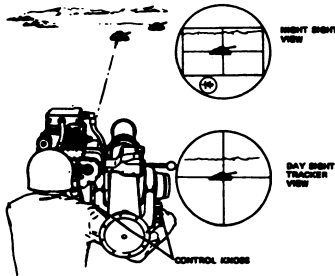


5. "LAUNCH" the missile.

NOTE: There is a 1.5 second delay before missile launches.

6. To track the target:

- Turn the control knobs, keeping the cross hairs on the center of the target.



NOTE: Track with smooth motions on the control knobs.

Do NOT:

- Make jerky movements.
- Allow the missile case to rest on your shoulder.
- Change from the night sight to the day sight tracker or vice versa after the missile has been fired.
- Fire again if 2 unsuccessful firings occur in a row.

7. Continue tracking the target until the missile impacts.

CAUTION: If two consecutive unsuccessful firings occur, the launcher should NOT be fired again until checked by maintenance personnel.

- D. Repeat steps "B," "Determine if Target is Engageable" and "C," "Fire and Track Target", until Table VII firing is completed.**

TRAINING OBJECTIVE 2

BEHAVIOR: ENGAGE TARGET WITH TOW MISSILE

CONDITIONS:

1. When firing his first missile, the Marine being evaluated is provided: ground- or vehicle-mounted TOW weapon system, 1 missile, and a stationary target at a range of 2000 - 3000 (3750, if TOW 2) meters. The first missile will be fired during daylight.
2. When firing his second missile, the Marine being evaluated is provided: ground- or vehicle-mounted TOW weapon system, 1 missile, and a moving target at a range of 1500-2500 meters. The second missile will be fired during daylight.
3. When firing his third missile, the Marine being evaluated is provided: ground- or vehicle-mounted TOW weapon system, 1 missile, night tracker, and a stationary target at a range of 2000-3000 (3750, if TOW 2) meters. The third missile will be fired during the darkness.

4. When firing his fourth and subsequent missiles, the Marine being evaluated is provided: ground- or vehicle-mounted TOW weapon system, 1 missile, and a moving target at a range of 1500-2500 meters. The fourth and subsequent missiles will be fired during darkness.

NOTE: If a Marine demonstrates exceptional proficiency during training, commanders are authorized to allow that Marine to skip one level of firing and move on to a more difficult one.

STANDARD: Round must hit target.

A. Prepare TOW for firing.

Select either of the following two procedures, depending upon whether you are setting up a ground-mounted or vehicle-mounted TOW weapons systems.

Ground-mounted TOW weapon system

1. To set up the tripod:

CAUTION: When operating the detent stop levers, move the levers toward the leg.

- a. Release leg lock handles.
 - Open tripod by pulling outward on each tripod leg until detent stop engages at the desired detent position.
 - Press detent stop levers toward the tripod leg to make further leg adjustments.
 - On level terrain, pull leg lock handles down toward the foot to lock the legs at the desired DETENT position.
 - On sloping terrain:
 - Adjust tripod legs to obtain level condition.
 - Adjust the DOWNHILL LEG in direction of fire.
 - Position DOWNHILL LEG to level the tripod in the downhill plane.
 - Tighten leg lock handles.
 - Force tripod anchor claws into ground to ensure a firm base.
 - Release coupling clamp to allow mounting of traversing unit.
- b. Install traversing unit.

CAUTION: Do not allow foreign matter to accumulate in connector end of coil cord.

- Pass connector end of coil cord through the body of the tripod.
- Center the traversing unit over the tripod to mate with the tripod.
 - Secure component in place using the coupling clamp.
- c. Install optical sight.

CAUTION: Handle optical sight with care; it is a precision device and contains fragile components.

- With the latch assembly all the way down:
 - Align the optical sight with the index plate on the traversing unit.
 - Secure the optical sight by lifting up on the latch assembly.
- Check the lens for cleanliness and damage.
 - Check that the RETICLE LIGHT control is set to OFF.

Vehicle-Mounted TOW Weapon System

1. To set up the tripod:
 - Clamp the tripod to the tripod rack assembly.
2. To install the launch tube:
 - Install launch tube to the top rack assemblies.
 - The breech end of the launch tube should be installed into the aft brackets attached to the aft rack assembly.
 - Secure the front end of the launch tube to the front rack assembly, using the tie-down strap.
3. To install the missile guidance set:
 - Install it on the pallet assembly using brackets and 4 tie-down straps.
4. Install the traversing unit to elevating pedestal assembly using coupling clamp.
5. To install the optical sight:
 - Follow the same procedure as for the ground-mounted TOW weapon system "Install optical sight."

B. Conduct system self-test.

1. Lift the cover over the TEST/OPERATE switch on the missile guidance set (MGS).
 - Press the switch to "TEST" and hold it in that position.

NOTE: To save time and prevent excessive wear on the TEST/OPERATE switch, the switch should be set to the TEST position and held in that position until the self-test is completed. If the TEST/OPERATE switch is released during the self-test, allow at least 3 seconds before restarting the test.

If:

Any pass/fail indicators on the display do NOT light up

Then:

Remove and replace the battery assembly and try the battery for recharging - OR -

Remove and replace the missile guidance set.

Green center lamp in AZIMUTH/ELEVATION cross does NOT light and glow steadily

Continue to hold the TEST/OPERATE switch to TEST.

2. Turn the elevation lock on the traversing unit to the UNLOCKED position.

- Hold the launch tube and move it up and down.

If:

Lights on the AZIMUTH/ELEVATION cross do NOT move up when the launch tube moves up and down when the launch tube moves down

Then:

Remove and replace the traversing unit - OR -

Contact the next higher echelon of maintenance.

3. Turn the elevation lock to the LOCKED position.

- Use the control knobs and turn the launch tube up and down until it locks.
- Turn the azimuth lock to the UNLOCK position.
- Hold the launch tube and turn it to the right, then left, and back to the center.

If:

Indicators on the display do NOT remain lit for 3 seconds

Then:

Remove and replace the missile guidance set.

BATT PASS indicator does NOT light up

Remove and replace the battery assembly - OR -

Remove and replace the missile guidance set.

BATT FAIL indicator remains off

Allow the missile guidance set to cool off - OR -

Remove and replace the missile guidance set.

MGS PASS indicator light does NOT light up

Remove and replace the missile guidance set.

MGS PASS indicator does NOT glow steadily

Set the night sight field-of-view switch to NFOV and the ON/OFF/STBY switch to ON

- OR -

Remove and replace the night sight.

PA PASS indicator does NOT light up

Continue to hold the TEST/OPERATE switch to TEST.

OSS PASS indicator does NOT light up

Remove and replace the day sight tracker.

OSS PASS indicator does NOT glow steadily

Set the focus control on day sight tracker to +3 position, and continue to hold the TEST/OPERATE switch to TEST.

Lights on AZIMUTH/ELEVATION cross do NOT move right and left when the launch tube is moved right and left

Contact the next higher echelon of maintenance.

4. Turn the azimuth lock on the traversing unit to LOCK.

- Use the control knobs and turn the traversing unit until it locks.

5. Release the TEST/OPERATE switch on the missile guidance set and close the cover over the switch.

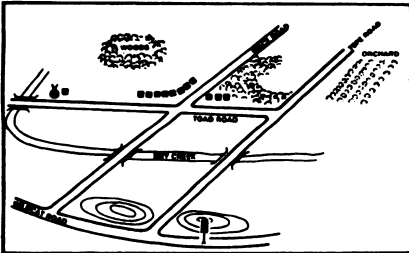
C. Prepare antiarmor range card.

NOTE: A range card is a sketch of the terrain that a weapon has been assigned to cover by fire. It contains information which assists in planning and controlling fire, the rapid detection and engagement of targets, and the orientation of replacement personnel or units.

1. In the lower center of your range card draw the symbol of your TOW to indicate your firing position.

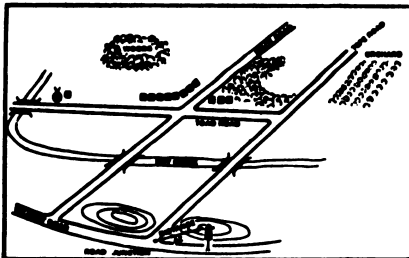
- Draw and label your sector sketch.

- Draw roads, bridges, buildings, streams, hills, woods, etc.



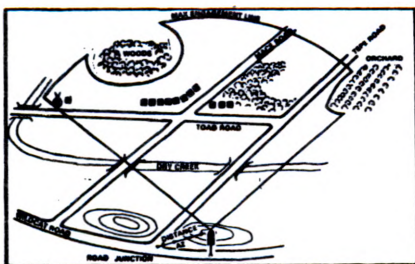
2. Draw an arrow from a nearby recognizable terrain feature to show the location of your firing position.

- Add distance and azimuth from the terrain feature to your firing position.



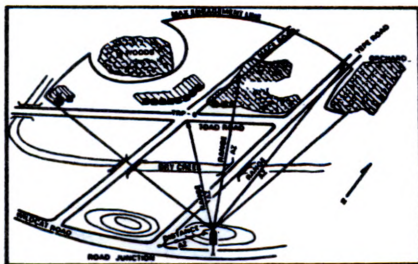
3. Draw in your sector (an enclosed line that outlines your sector of fire).

NOTE: A maximum engagement line is a segment of the sector line which indicates the maximum range at which targets may be engaged.

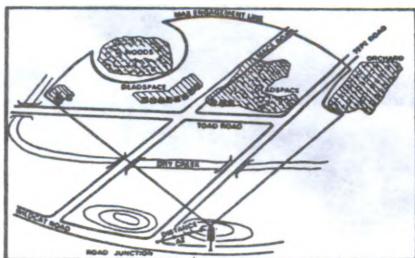


4. Orient the range card with the terrain and determine the direction of magnetic north with a compass.

- Draw a magnetic north arrow properly oriented.
- Draw the target reference points (TRP) in sector and label them.
- Draw in the range and azimuth to the TRP's.



5. Draw in the deadspace in your sector.



NOTE: Be sure and indicate the word DEADSPACE along those areas that you cannot engage.

D. Prepare missile for firing.

- Ensure that azimuth and elevation locks on traversing unit are locked.
- Raise the bridge clamp.

NOTE: Save forward handling ring and quick release clamp for reuse if missile is not fired.

CAUTION: Use care not to puncture the encased missile diaphragm when the forward handling ring is removed.

E. Load missile.

1. To load the missile when in the ground-mounted mode:

- a. Stand on the left side of the launcher.
- b. Make sure that the azimuth lock and elevation lock on the traversing unit are in the LOCK/LOCKED position.
- c. Push the bridge clamp locking handle on the traversing unit upward and forward and open the bridge clamp.
- d. Carry the encased missile to the TOW 2 weapon system and check the diaphragm for breaks.

CAUTION: DO NOT break the rear diaphragm on the end of the encased missile.

- e. Pull up on the quick release clamp and the forward handling ring.
- f. Turn the inside portion of the protective cover 2 complete turns counterclockwise.
 - Turn the protective cover counterclockwise and remove it from the electrical connector.
- g. Turn the encased missile so that the electrical connector is on top.
 - Slide the indexing lugs on the encased missile into the indexing slots on the launch tube.
 - Slide the encased missile forward and down into the launch tube until the indexing lugs are firmly in place.

NOTE: The back end of the missile must be lowered so that the electrical connector will join the bridge clamp.

- h. Lower the ridge clamp and lock the missile by pushing down on top of the bridge clamp.
 - Pull the bridge clamp locking handle down and backward.

REMEMBER: DO NOT RAISE THE ARMING LEVER UNTIL YOU ARE READY TO FIRE.

F. Identify target.

Visually select the target without using the day sight tracker or night sight.

G. Determine if target is engageable.

See Training Objective 1 - "Determine if Target is Engageable."

H. Fire and track target.

See Training Objective 1 - "Fire and Track Target."

I. Cease tracking.

NOTE: Cease tracking when the missile impacts.

RESOURCES:

TM 9-1425-470-12, TOW Heavy Antitank/Assault Weapon System
TM 9-6920-472-12, TOW Weapon System Training Set, Guided Missile System M70
MCI Course 03.55a, The TOW 2 Weapon System Crewman

TASK: TAKE IMMEDIATE ACTION (TOW) (G-0352-23.7/PFC)

CONDITIONS: Conditions are determined by mission requirements. You will, acting as a gunner, be provided: TOW launcher, assistant gunner, constructive misfire situation, and an MSR.

STANDARD: You will demonstrate and/or explain how to take immediate action for a TOW misfire. Training steps must be performed sequentially.

BATTLE DRILL(S): 16, 20

PERFORMANCE STEPS:**A. Announce either "hangfire" or "misfire."**

NOTE: A hangfire is an unexpected delay of missile launch exceeding the normal 1.5 seconds after the trigger is pressed. Any such delay should be considered a potential hangfire until this possibility can be completely ruled out.

A misfire is a failure of the missile to launch after *repeated attempts* to fire. Any delaying launch exceeding the normal 1.5 seconds should be considered a potential hangfire.

1. When weapon fails to fire, continue tracking and notify a-gunner of misfire or hangfire.
 - Keep the launch tube pointed down range.
 - Lower then raise the arming lever.
 - Attempt to fire the missile again.
 - Have all crew members remain in their firing positions while further attempts are made to fire the blast simulator and correct the malfunction.

B. Check the missile guidance set (MGS) connector.

1. Check the following connections to make certain they are properly connected:
 - Missile guidance set connector
 - Instructor console connector
 - Traversing unit coil cord
2. Check the missile guidance set TEST-OPERATE SWITCH to ensure it is in the OPERATE position.
3. Make sure the instructor console PYRO ENABLE switch is ON.

C. Check the bridge clamp locking handle.

- Check to make sure the bridge clamp is locked into position.

D. Check the arming lever.

- Check to ensure the arming lever is raised to connect the launcher to the missile simulation round.

E. Make two additional attempts to fire by lowering and raising the arming lever and pressing the trigger.***F. After the last attempt, lower the arming lever to the safe position.******G. Wait 30 minutes (training only).***

NOTE: In a training situation, wait 30 minutes before removing a misfire from the launch tube. Notify explosive ordnance disposal (EOD) personnel of the misfire.
--

H. Remove missile and place it away from position, pointing toward enemy.

1. Remove the missile simulation round to the reloading area.
 - Wait 2 minutes.
 - Unload the blast simulator.
2. Dispose of the blast simulator according to SOP.

RESOURCES:

TM 9-6920-470-12, Operator and Organizational Maintenance Manual for Training Set, Guided Missile System M70

TASK: DIRECT AIRSTRIKE (G-0369-24.1/SSGT)

CONDITIONS: Conditions are determined by mission requirements. Given a target, an attack or fighter/attack aircraft carrying live or training ordnance and appropriate communication equipment, frequency and call signs, you will direct an airstrike.

STANDARD: Ordnance must have desired effect on target.

BATTLE DRILL(S): 18

PERFORMANCE STEPS:**A. Establish radio communication with pilot.**

(See number 1 below)

B. Give mission brief.

State brief in a SLOW, clear, and concise manner.

Do the following:

You Say:

1. Give unit identification or call sign	1. WHISKEY PAPA 1052. THIS IS ECHO 3 CHARLIE
2. Give tactical situation (volume and type of fire).	2. UNDER HEAVY FIRE
3. Give target description.	3. 25 TROOPS IN OPEN DITCH AND IN 2 COVERED DIRT BUNKERS
4. Give target location.	4. TARGET GRID COORDINATES TWO EIGHT ONE FOUR SIX ONE
5. Give time ordnance.	5. STRIKE AT 1530 (OR STRIKE IN 3/5 MINUTES, HACK.)
6. Recommend ordnance.	6. RECOMMEND BOMBS, ROCKETS AND NAPALM

Select Ordnance based upon Type of Target:

You Select and Say:

- Soft targets (such as infantry, nonarmored vehicles and trucks)

STRAFING or NAPALM

- Hard targets (tanks)

ROCKETS or ROCKEYE

- Bunkered positions

DELAYED FUZED BOMBS, ROCKETS or NAPALM

<i>Do the following:</i>	<i>You Say:</i>
7. Give location of friendly troops.	7. ECHO 3 CHARLIE COORDINATES AT TWO NINER TWO FOUR SIX SIX
8. Show how friendly positions are marked.	8. YELLOW PANELS MARK ALPHA ONE FOXTROT
9. Give attack heading in magnetic degrees.	9. ATTACK HEADING 160 DEGREES OR 340 DEGREES
10. Determine method of marking targets.	10. I CAN MARK TARGET WITH WHITE PHOSPHORUS STAND BY FOR MARK, (PAUSE UNTIL IMPACT OF MARKING ROUND) MARK

C. Adjust ordnance delivery from mark.

1. Use cardinal direction (North, South, East, West) and distance from <u>last hit</u> .	1. FROM MARKING ROUND, NORTHWEST 400 METERS
2. Use clock direction (attack heading is 12 o'clock over the marking round) and distance from marking round to target.	2. FROM MARKING ROUND, 8 o'CLOCK 400 METERS

D. If necessary, abort the run at any time.

ABORT, ABORT

- Target previously destroyed.
- Unforeseen circumstances (examples: civilians in area or friendly troops too close to target).
- Aircraft malfunctions.

E. Terminate the mission.

- Target has been destroyed.
- Mission has been accomplished.
- Aircraft mission has been diverted.

CODE WORD

- Mission has been accomplished.

(GIVEN BY AIR OFFICER ON GROUND

or

- Aircraft mission has been diverted.

MISSION COMMANDER)

F. Provide the pilot with battle damage assessment.

Status of damage:

1. Complete
2. Partial
3. None
4. Unknown

Message:

1. DESTROYED, COMPLETED,
NEUTRALIZED
or
 2. PARTIAL AREA COVERED
BUT INSUFFICIENT
or
 3. NO DAMAGE
or
 4. DAMAGE UNKNOWN (AT THIS
TIME)
-

RESOURCE:

FMFM 5-4, Offensive Air Support

TASK: RECOMMEND LOCATIONS FOR FIGHTING POSITIONS FOR CREW SERVED WEAPONS (G-0369-24.2/SSgt)

CONDITIONS: Conditions will be determined by mission requirements. You will be provided: a defensive order, a primary and supplementary position to defend, a sector of fire for each position and the general trace and flanks of the positions; given a rifle platoon and at least one Dragon or TOW squad, one heavy machinegun team, an assault team and M-60 machinegun squad.

STANDARD: Upon completion of the training steps, the assigned sectors of fire will be covered by crew-served weapons, the most likely armor avenues of approach will be covered by antitank weapons and the most likely dismounted avenues of approach will be covered by machineguns.

BATTLE DRILL(S): 27

PERFORMANCE STEPS:

A. Coordinate with adjacent platoons.

- Crew served unit leader establishes liaison (verbally, by radio or messenger) with the adjacent unit leader.
- Platoon Sergeant must coordinate with crew served unit leader for recommended positions.

B. Coordinate with squad leaders.

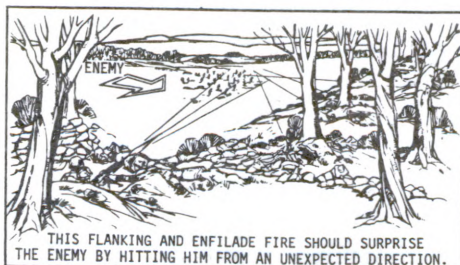
- Crew served unit leader speaks to squad leaders about fire plan.

C. Designate primary positions for weapons.

1. Defend the most likely armor avenues of approach into platoon areas with dragons, rifle platoons, heavy machine gun team(s), and the assault team(s).

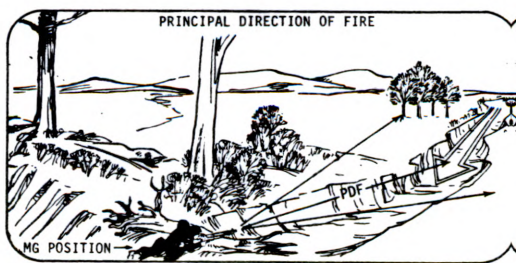


2. Defend the most likely dismounted areas of approach into the platoon area with M60 machineguns (and caliber .50 machineguns in mechanized units) from the primary positions, with emphasis on protection for the anti-armor position.



3. Position machine gun (M).

- Position machineguns in pairs to fire *final protective line* (FPL) parallel to one another.
- Hit the long axis of the beaten zone for maximum effectiveness.

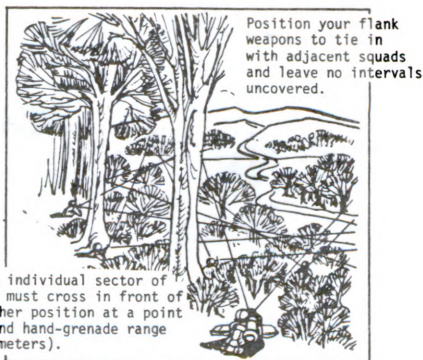
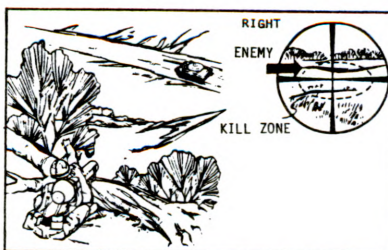


4. Assign each machinegun (M) all of the following:

- A primary and secondary sector of fire
- A FPL or *primary direction of fire* (PDF)
- At least one alternate position
- Supplementary positions that give depth to the defense, provide mutual support to adjacent platoon, and/or meet and attach to another unit from a different direction

5. Position dragon. (D):

- Position dragons laterally and in depth to cover a designated armor kill zone.
- Coordinate fire to provide a timely massing of fire at the critical point.
- Hide its launch signal from the fronts with cover and concealment. A rise in the ground that covers and conceals both the weapon and backblast is best.
- Form a minimum range of 65 meters.



Each individual sector of fire must cross in front of another position at a point beyond hand-grenade range (35 meters).

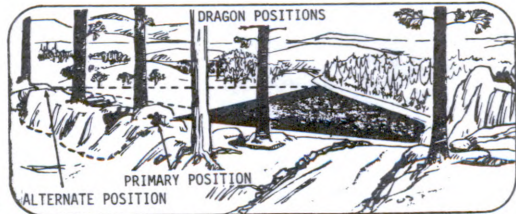
6. Position all weapons.

- Place weapons for cover, concealment and good fields of fire.
- Each individual sector of fire must cross in front of another position at a point beyond hand-grenade range (35 meters).
- Put them where their fires will be overlapping, integrated, and mutually supporting.
- Position them so that their fires will be heavier on the avenues of approach than the enemy will use.
- Place weapons on flanks of your position so they can be tied in with the adjacent unit fires to prevent gaps.



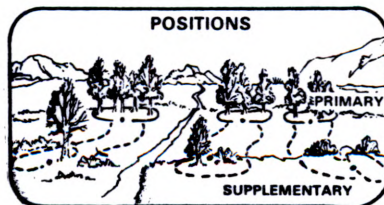
D. Designate alternate positions for weapons, if required.

- Use alternate position when the primary position can no longer be manned.



E. Designate supplementary positions for weapons, if required.

- Use supplementary position to provide the best location for the accomplishment of a task that cannot be accomplished from the primary or alternate position.
 - For Example: providing mutual support to adjacent platoons or defending against an attack from a different direction (See visual.)



RESOURCES:

FM 7-11 B 3/4 Soldier's Manual for MOS 11B, Skill Levels 3 and 4
 FM 7-8 The Infantry Platoon and Squad

TASK: PREPARE PLATOON DEFENSIVE FIRE PLAN (G-0369-24.3/SSgt)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: administrative materials and a reinforced rifle platoon in a defensive position.

STANDARD: Upon completion, the plan will accurately reflect the information contained in training step C. The proper military symbols must be used. A time limit for completion may be imposed by the evaluator.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:**A. Coordinate with adjacent platoons.**

- Platoon sergeants will communicate with each other to establish the limits of their sector of fires.

B. Compare squads' defensive sketches with actual layout on the ground.

- When you compare squad sketches, ensure that the sketches match the actual emplacement of squads' sectors of fire and crew-served weapons.

C. Using the overlay paper, plot the following:

- Draw a sketch of your unit location.
- See the figure for an example of a completed fire plan.

1. Draw squads' primary positions and sectors of fire. 
2. Draw positions and *Principle Direction of Fire (PDF)* of all squad automatic weapons. 
3. Draw positions and PDF of all grenade launchers; draw positions and *Final Protective Line (FPL)* of all machineguns. 
4. Draw positions and sectors of fire for any antiarmor weapon. 
5. Draw indirect fire *Principle Direction of Fire (PDF)* and/or on-call targets within sector. + 25

- This number is designated by the *Fire Support Coordination Center (FSCC)*.

6. Draw location of observation/listening posts. 
7. Draw location of major obstacles leading into platoon position.

- Symbol will change according to the obstacle.

8. Draw location of machinegun(s). 

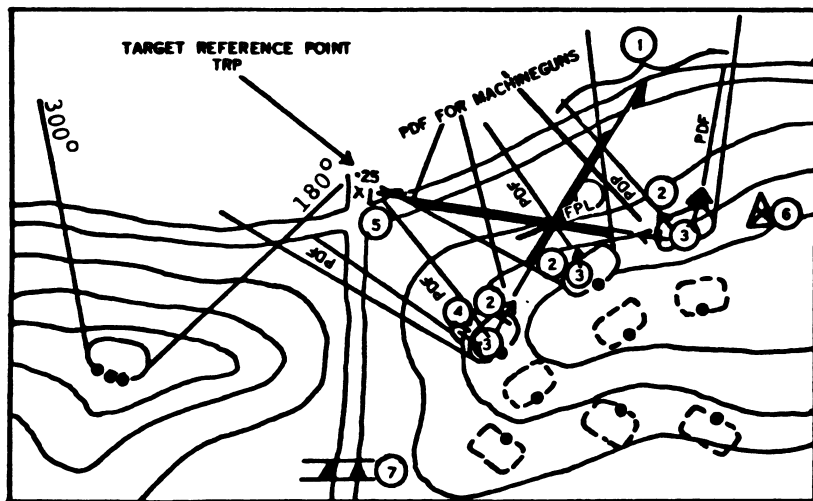
9. Draw location of any anti-armor assets:

Tow



Dragon





Example of a Completed Fire Plan Using the Previous Symbols.

D. Deliver fire plan to platoon commander.

- Hand platoon commander completed sketch.

RESOURCE:

FM 21-30, Military Symbols

TASK: PREPARE SITUATION REPORT (G-0369-25.1/SSGT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: S-3 worksheets, journal file, operation order, file copies of previous SITREPs, companies' SITREPs, S-1/S-2/S-4 input and S-3's guidance.

STANDARD: Upon completion, the situation report will be prepared in proper format and will accurately and completely reflect the information previously provided. Time limitations on distributing the completed SITREP may be imposed by unit SOP. The reference may be used in completing this task.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:

A. Secure classification and downgrading instructions, if applicable. (1)

- Go to S-1 Officer for this information.

B. Write in order.

1. *Copy number* ②

- a. Assigned to the original and each copy by the issuing headquarters.
- b. Consists of the individual copy and the total number of copies prepared.

2. *Issuing headquarters* ②

- a. Shown in all forms which situation report will be referred to in the order and by its official designation.
- b. Issued a code name when secrecy requires.

3. *Place of issue* ②

- a. The physical location of the headquarters at the time of issue.

NOTE: - This may be in the form of city and country, map coordinate, postal designator or code name.

- Coordinates are included when doubt may arise as to exact location.

- Vague terms such as "at sea" or "in the field" are not used.

- b. Write entry entirely in CAPITAL LETTERS.

4. *Date/time group* ②

Refers to the date and time that the report is signed.

The diagram shows a rectangular box representing a form. Inside the box, the text is organized as follows:

- At the top left, the text "CLASSIFICATION" is followed by an arrow pointing left and the text "(Omit subparagraphs not applicable)". A circled number "1" is to the right of this text.
- Below this, there is a bracketed section containing the following text: "Copy no. of copies", "Issuing headquarters", "PLACE OF ISSUE", and "Date/time group". A circled number "2" is to the right of this bracketed section.
- At the bottom left, the text "to date/time" is partially visible.

NOTE: It is also the time when the report is effective unless otherwise stated.

5. *Situation Report No.* ③

- a. Arbitrary sequential number assigned by the originator of the report.
- b. Look in *Operation Order, Annex R*.

6. *Period covered: (Date/time to Date/time)* ③

Look in *Operation Order, Annex R*, for designated cut off times.

7. *Map reference data* ③

- a. Look in *Operation Order, Annex B*, for this information.
- b. List relevant maps and charts which will be used by the order.
- c. Identify maps by series number, geographical location, sheet number, edition and scale.

Diagram of a Situation Report form. The form is divided into two main sections. The left section contains the following fields:

- SITUATION REPORT NO. _____
- Period Covered: (Date/time to date/time)
- Maps:
- 1. ENEITY

The right section is labeled "date/time group" and contains a large empty space for additional information.

C. Make entries in the five-paragraph sitrep format, excluding subparagraphs that are not applicable. ④

Diagram of a five-paragraph sitrep format form. The form is divided into several sections:

- Maps:**
 - 1. ENEITY
 - a. Units in contact.
 - b. Enemy reserves which can affect local situation.
 - c. Brief description of enemy activity during period covered by report.
 - d. Brief estimate of enemy strength, material means, morale and his probable knowledge of our situation.
 - e. Conclusions covering courses of action open to enemy.
- 2. OWN SITUATION**
 - a. Location of forward elements.
 - b. Location of units, headquarters, and boundaries.
 - c. Location of adjacent units and supporting troops.
 - d. Brief description and results of operations during period of report.
 - e. Noneffective units.
- 3. COMBAT SERVICE SUPPORT**
(General statement of the CSS situation if other than normal as it directly affects the tactical situation.)
- 4. GENERAL**
- 5. COMMANDER'S EVALUATION**
(To be completed when directed by higher authority)

The form is numbered ④ on the right side.

D. Label and sequence all annexes and overlays if used. ⑤

5. COMMANDER'S EVALUATION
(to be completed when directed by higher authority)

AUTHENTICATION: _____
ANNEXES: ← ⑤
DISTRIBUTION: _____

Signature of Commander

(number)

1. Tab enclosures.
2. Attach to back of situation report.

NOTE: An annex may be written, or take the form of a trace, overlay, or overprinted map, sketch, plan, or table.

3. Letter annexes alphabetically in capitals (A, B, C, etc., and appendices with arabic numerals.)
 - Annexes may have one or more appendices.
4. Refer to annexes in the appropriate part of the body of the situation report.

NOTE: - Annexes are listed under the heading "ANNEXES" at the bottom of the situation report.

- Refer to appendices similarly in their parent annex.

5. Determine if annexes are issued at the same time as the situation report.

IF:

THEN:

- Annexes are issued with and in the same number of copies as the situation report.

- They only need to be suitably identified in respect to the situation report.

- They may also contain a security classification and, when appropriate, a list of appendices.

- Annexes are issued at different times from the situation report.

- In addition to the above information they must contain a heading, signature of commander or his appropriate representative or authentication, and a distribution list.

E. Ensure sitrep is authenticated. ⑥

- To authenticate, look for signature of responsible staff officer in charge of report, if other than commander.

COMMANDER'S EVALUATION
(to be completed when directed by higher authority)

AUTHENTICATION: ← ⑥
ANNEXES: _____
⑦ DISTRIBUTION: _____

Signature of Commander

- Distribution ⑦

1. Indicate who is to receive copies of the situation report.
2. Look at *Operation Order, Annex R*.

F. Distribute sitrep according to unit SOP.**SAMPLE: SITUATION REPORT**

FROM: CO, 2nd BN, 5th MAR
TO: CO, 17th, MAU

SITREP 15: Period 120600T to 121800T Jul, ENEMY: No change enemy locations or identifications. Periodic hostile shelling of Bn area. Patrol approximately 30 men attacked Co A at 121000T Jul. 3 enemy KIA, 3MIA. Aggressor most probable course of action is to attack within 24 hours with present committed forces. OWN SITUATION: Bn continues defense LUIS river. No change in location and dispositions. Co A repulsed enemy patrol with no casualties. Bn reconnaissance patrol returned 121700T Jul, negative contact. COMBAT SERVICE SUPPORT: Normal

	CLASSIFICATION ←	①
	(Omit subparagraphs not applicable)	
	Copy no. of copies Issuing headquarters PLACE OF ISSUE Date/time group	②
③	SITUATION REPORT NO. ____	
	Period Covered: (Date/time to date/time)	
	Maps:	
	1. ENEMY	
	a. Units in contact.	
	b. Enemy reserves which can affect local situation.	
	c. Brief description of enemy activity during period covered by report.	
	d. Brief estimate of enemy strength, material means, morale and his probable knowledge of our situation.	
	e. Conclusions covering courses of action open to enemy.	
	2. OWN SITUATION	
	a. Location of forward elements.	
	b. Location of units, headquarters, and boundaries.	
	c. Location of adjacent units and supporting troops.	④
	d. Brief description and results of operations during period of report.	
	e. Noneffective units.	
	3. COMBAT SERVICE SUPPORT (General statement of the CSS situation if other than normal as it directly affects the tactical situation.)	
	4. GENERAL	
	5. COMMANDER'S EVALUATION (To be completed when directed by higher authority)	
	AUTHENTICATION: ← ⑥ Signature of Commander	
	ANNEXES: ← ⑤	
	DISTRIBUTION:	
	(Page number)	
	CLASSIFICATION ←	①
	SAMPLE: SITUATION REPORT IN WRITTEN FORM	

RESOURCES:

FMFM 3-1, Command and Staff Action
FM 7-11B 3/4. Soldier's Manual for MOS 11. Skill Levels 3 and 4

TASK: PREPARE OPERATION OVERLAY (G-0369-25.2/SSgt)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: a map, an operational order, guidance from the S-3 and administrative materials.

STANDARD: Upon completion, the overlay will graphically depict the unit's operation order. Correct military symbols must be used.

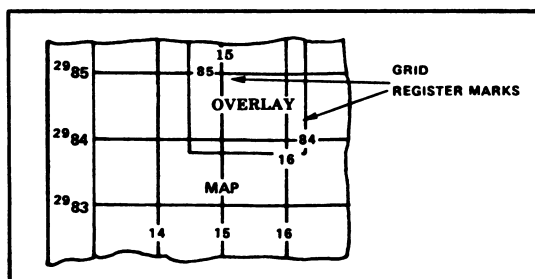
BATTLE DRILL(S): 28

PERFORMANCE STEPS:

A. Place overlay paper over situation map and secure in place with tape.

B. Register overlay to map.

1. Place the overlay material over the map area to be annotated.
2. Attach it to the map temporarily with tape.
3. Trace the grid intersections nearest the opposite corners of the overlay.
4. Label each grid intersection with the proper grid coordinates.



C. Plot unit locations, tactical control measures and fire support control measures.

Reference Prepare/Update Situation Map (G-0369-25.3), Steps B and D.

D. Plot enemy information, as required, on separate overlay.

Reference Prepare/Update Situation Map (G-0369-25.3), Step C.

E. Register overlay to map (1).

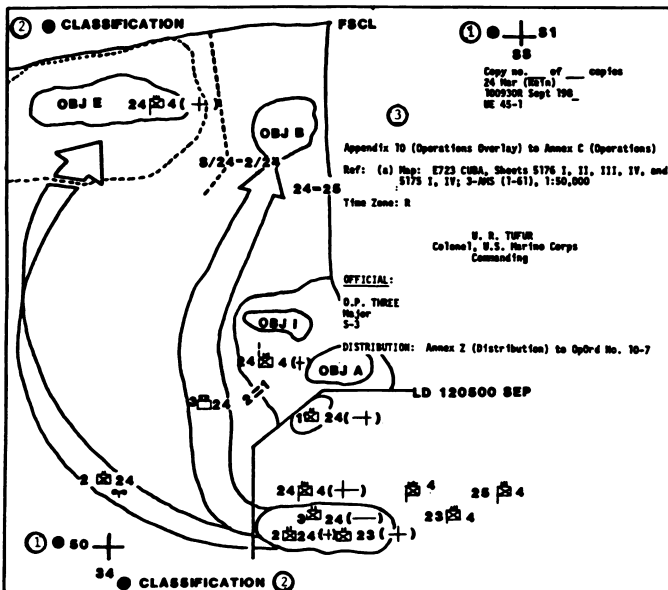
- See B Step 2.
- See above visual.

F. Assign any classification markings and downgrading instructions (2).

- Copy classification markings and downgrading instructions from map to overlay.
- The markings should be in the top or bottom of overlay.
- If there are downgrading instructions, they will be next to the classification.
- See visual below.

G. Write in order heading and map reference data (3).

- Look on map
- Write where there is available space on overlay.
- See visual below.



This is an example of a completed Operation Overlay

RESOURCE:

FMFM 3-1, Command and Staff Action

TASK: PREPARE/UPDATE SITUATION MAP (G-0369-25.3/SSgt)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: situation map, situation reports, spot reports, S-2 and S-3 worksheets, an operational order, and other administrative material.

STANDARD: The map must accurately portray, using correct military symbols, the information contained in the training steps. Updates must be plotted as information is received.

BATTLE DRILL(S): 28, 30

PERFORMANCE STEPS:**A. Plot information based on spot/situation reports.**

- Select appropriate symbols to prepare and update situation map.

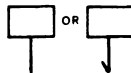
B. Plot friendly unit locations.

1. Use black or blue ink to depict friendly units on a multicolor overlay.
2. Use single lines to depict friendly units on a one-color overlay.
3. Designate positions of various "Troop Unit," by using the appropriate symbols:

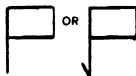
- Troop Unit



- Troop Unit Location



- Command Post
or Headquarters



- Observation Post



- Reinforced Unit



- Unit from which a
Subordinate Unit has
Detached



- Proposed Location
of a Troop Unit



- Strength or
Composition of Unit
Unknown



- Reinforced Unit
Multiple Command Post



4. Depict "Type of Unit," by using the appropriate symbols:

- Supply Unit



- Air Wing Unit

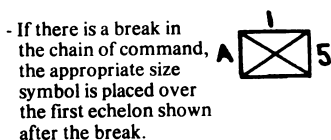
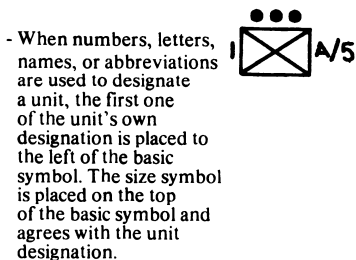
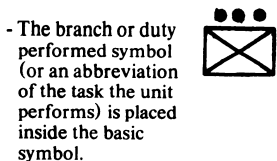
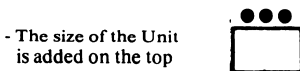
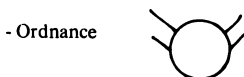
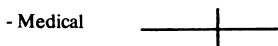
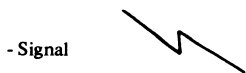


- Infantry

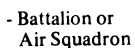
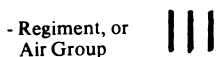
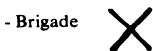
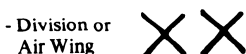


- Chemical





6. Depict "Size of Unit," by using the following symbols:



- | | | | |
|----------------------|---|-------------------------|---|
| - Company or Battery |  | - Platoon or Detachment |  |
| - Section |  | - Squad |  |
| - Fire Team |  | | |

7. Describe "Examples of Size of Unit" by using the appropriate symbols:

- | | | | |
|------------------------------|---|----------------------------|---|
| - Infantry Platoon |  | - Artillery Battery |  |
| - Aviation Squadron |  | - Company Observation Post |  |
| - Infantry Regiment |  | | |
| - Battalion Observation Post |  | | |

8. Show "Weapons and Vehicles," by using the appropriate symbols:

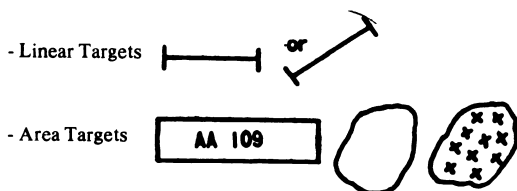
- | | | | |
|--|---|---|---|
| - Basic Infantry Weapon (light automatic weapon) |  | - Basic artillery weapon |  |
| - High trajectory (placed on base of weapon symbol) |  | - Antiaircraft (A is placed at the base of the shaft) Example: light AA gun |  |
| - Armored Vehicle (surrounding armament symbol—tracked vehicle only) |  | - Rocket Projector (placed at the head of a weapon symbol) |  |
| - Antitank (placed at the base of weapon symbol) |  | - Weapon Size (Light) |  |
| - Weapon Size (Medium) |  | - Weapon Size (Heavy) |  |

- Weapon Caliber (Light)		- Weapon Caliber (Medium)	
- Weapon Caliber (Heavy)		- Tracked Self-Propelled vehicle place below symbol	
- Automatic Rifle, Light Machinegun		- Heavy Machinegun	
- TOW			
- Dragon		- Mortar 81 mm	
- Howitzer 155mm (Medium)			
- Howitzer 155mm, Self-propelled (tracked)		- Missile or Rocket (Light)	
- Missile or Rocket (Medium)		- Missile or Rocket (Heavy)	
- Surface to Surface (SSM) Launching Site (Light)		- Surface to Surface (SSM) Launching Site (Medium)	
- Surface to Surface (SSM) Launching Site (Heavy)		- Surface to Air (SAM) Launching Site (Light)	
- Surface to Air (SAM) Launching Site (Medium)		- Surface to Air (SAM) Launching Site (Heavy)	

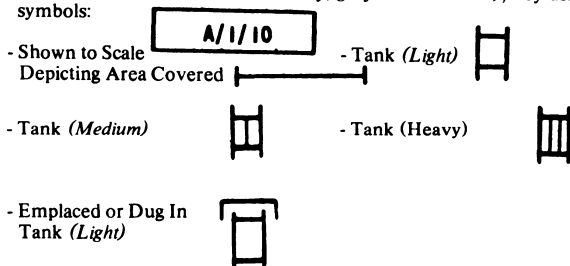
9. Designate "Concentrations (artillery, gunfire and mortars)," by using the appropriate symbols:

- Targets of
Less than 100 Yards

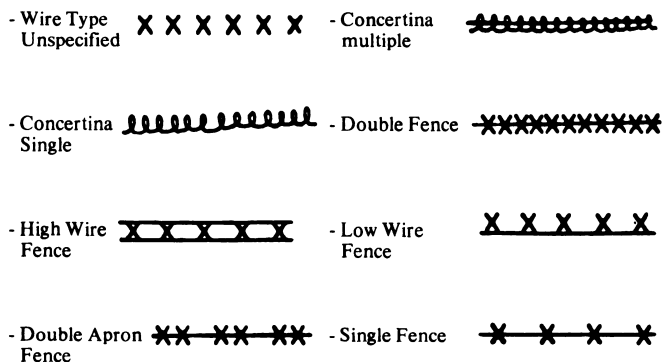




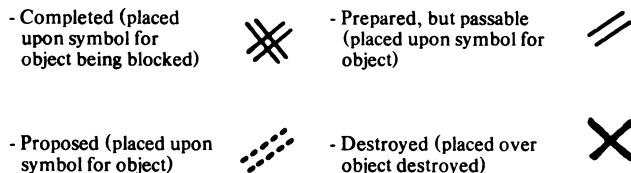
10. Depict "Final Protective Fires (artillery, gunfire and mortars)," by using the appropriate symbols:



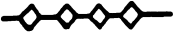
11. Describe "Entanglements," by using the appropriate symbols:



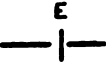
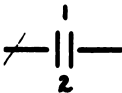
12. Portray "Obstacles (General)," by using the appropriate symbols:



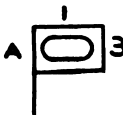
13. Portray "Obstacles (Tank)," by using the appropriate symbols:

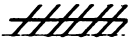
- Tank Obstacle, Unspecified  - Tank Ditch, Open 
- Tank Ditch, Covered  - Tank Ditch with Stakes 
- Tank Wall or Bank 
- Fighting Holes or Emplacement  - Two Emplacements of Automatic Weapons 
- Three Foxholes for Two Men Each  - Trench System 
- Dugout  - Pillbox or Casement 

14. Designate "Boundaries and Delineated Areas," by using the appropriate symbols:

- Boundary between 1st and 2nd Squads  - Boundary between Company E and Company F 
- Boundary between 2nd and 3rd Platoons  - Boundary between 1st and 2nd Battalions 
- Occupied Unit Areas Platoon-size Area  - Proposed Areas intended for occupation 
- Platoon-size area

15. Depict "Operational and Logistic Installation Symbols," by using the appropriate symbols:

- Co A, 3d Tank Bn Command Post  - 1st Bn, 7th Mar Command Post 

- 3d Plat, Co B Observation Post		- A Btry, 1st Bn, 12th Mar Observaton Post	
- Observation Post 2 2d Bn, 2d Mar		- Sentinel Post	
- Listening Post		- Prisoner of War Compound	
- Collection point, Graves Registration Point		- Collection point, Civilian	
- Aid Station or Field Hospital		- Aid Station, 2nd Bn, 5th Mar	
- Clearing Station, Med Bn FSSG		- Supply Installation, Ammunition	
- Rations		- Supply Installation, Small Arms	
- Aid Station, Petroleum (Fuel, Oil)		- Aid Station, Water	
- Impassable Section of Route		- Main Supply Route	
		- Light Line (Lights Prohibited)	

C. Plot enemy unit location.

1. Show *enemy location* on the *S-2 situation map* only.

NOTE: When the enemy situation is placed on the friendly situation map, confusion and misinterpretation occur.

2. Use *red ink* to depict *enemy units, activities, installations and equipment*.
3. Use *double lines* to depict *enemy units* on a one-color overlay.
4. Portray *Enemy Identification* by using appropriate symbol:

- Trace of Enemy Forward Disposition



5. Depict trace of thinly held or patrolled parts of enemy frontlines (staggered line of hollowed dots):



6. Use the appropriate symbols to show *size and type of unit*:

- Enemy Platoon Area



- Enemy Observation Post



- Enemy Infantry Division



- Enemy Engineer Company



- Enemy Armored Cavalry Regiment

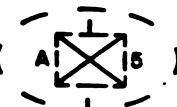


D. Plot tactical and fire support coordination control measures.

1. Use *Solid and Broken Lines*.

2. Show "*Tactical/Fire Support*" by using the appropriate symbols:

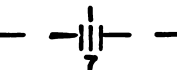
- Unoccupied Blocking Position (to be occupied by Co A, 5th Marines)



- Regimental Boundary (effective at time of order)



- Regimental Boundary (to become effective on order of division)



- Occupied Blocking or Defensive Position (position is occupied by CO A, 5th Marines)



- Helicopter Landing Zone (Primary)



- Helicopter Landing Zone (Alternate)



- Route of March (may be labeled: purpose-advance, withdrawal, etc; code name, unit designation.) (Arrow follows specific route.)

Route of March ALFA



- Route of March (*Alternate*)

Route of March ALFA



- Phase-Line (labeled "PL" letter number, or code name at both ends)

PL APPLE _____ **PL APPLE**
PL THREE _____ **PL THREE**
PL BRAVO _____ **PL BRAVO**

- Restricted Fire Line- (solid red line labeled "RFL" with establishing unit and DTG at both ends)

RFL (8th Mar) _____ **RFL (8th Mar)**
221935 _____ **221935**

- Fire Support Coordination Line (solid line labeled "FSCL" with establishing unit and effective DTG at both ends)

FSCL (1 MAF) _____ **FSCL (1 MAF)** **Final CL** _____ **Final CL**
250730 _____ **250730**

- Final Coordination Line (solid line labeled "Final CL" at both ends)

- Force Beachhead Line (solid line curved to define the beachhead with "FBHL" at both ends)

FBHL  **FBHL**

- Coordinated Fire Line (broken line, shown in black, and labeled "CFL" at intervals along the line with establishing unit and DTG at both ends)

CFL (1st MarDiv) _____ **CFL** _____ **CFL (1st MarDiv)**
220730 _____ **220730**

- Probable Line of Deployment (broken line labeled "PLD" at both ends)

PLD _____ **PLD**

- Trace of Friendly Forward Dispositions (series of short lines curved in the direction of the enemy)



- Trace of Thinly Held or Patrolled Parts of Frontline (staggered line of dots)



- General Trace of the Forward Edge of the Battle Area (coordinating points on unit boundaries)



- Line of Contact (opposing traces or as a friendly trace labeled "LC")



- Specific Trace of the Forward Edge of the Battle Area (line between labeled coordinating points)



- General Trace of the Combat Outpost Line (coordinating points labeled "COP" on unit boundaries)



- Line of Departure
Solid line labeled "LD" or as a trace labeled "LD is LC" (Line of Departure as Line of Contact), "LD is FFD" (Line of Departure is Friendly Forward Dispositions) normally in conjunction with a time of attack

LD 101200 May		LD 101200 May
LD is LC 071000 Aug		LD is LC 071000 Aug
LD is FFD 280800 Feb		LD is FFD 280800 Feb
LD is PPos 161430 Sep		LD is PPos 161430 Sep

3. Describe "Points" by using the appropriate symbols:

- Checkpoints (circles numbered at random)



- Contacted Point (numbered square)



- Coordinating Point (an X enclosed in a circle; usually labeled "FEBA," "COP," or "GOP")



- Control Point (Helicopterborne Operations: a circled dot along a helicopter lane and labeled "CP")



- Penetration Control Point (Helicopterborne Operations: two concentric circles labeled "PCP" lying at a point where a helicopter lane crosses a coastline)



- Initial Point (Helicopterborne Operations: a cross enclosed in a circle at the landward end of a helicopter lane and labeled "IP")



- Rendezvous Point (Helicopter Operations: a circle split by a vertical line and labeled "RP" lying at the seaward end of the helicopter lane)



- Start Point (Initial Point) a shaded dot with the letters "SP." For clarity, SP may be placed elsewhere and an arrow shown to indicate the dot.



- Traffic Control Post (shown, lying along a route, may have unit designation)



- Withdrawal Point (Pre-assault Reconnaissance) (a circle labeled "WITHDRAW" and the time of withdrawal)



- Point of Departure (Night Attacks) (a solid dot and the letters "PD" along a line of departure)



- Rendezvous Point (a circle with "RDVU" to the right.) (If more than one needed, indicate with letter.)



- Rally Point (a circle labeled "RALLY" may be numbered if more than one is used)



- Release Point (a shaded dot with the letters "RP" to the right. For clarity, RP may be placed elsewhere and an arrow shown to indicate the dot.)



- Recovery Point (Pre-assault Reconnaissance) (a circle labeled "RECOV" with the time of recovery shown)



- Landing Point (Pre-assault a numbered, circled dot Reconnaissance) (a circle labeled "LAND" with the time of landing shown)



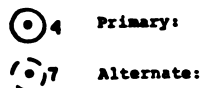
- Launch Point (Pre-assault Reconnaissance) (a circle labeled "LAUNCH" with the launch time shown)



- Passage Point (Passage of Lines) the letters "PP" and a number enclosed in a rectangle



- Linking Point (Linkup Operations) a numbered, circled dot

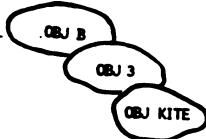


-Departure point
(Helicopterborne
Operations) depicted
as a labeled circle
on a helicopter
lane and labeled "DP".



4. Depict "Positions and Areas" by using the appropriate symbols:

-Objectives (a
solid closed OBJ—
using a letter,
number or code
name) reported



-Assembly Area (a closed
curve labeled with a unit
symbol) Example:
Command post location



-Command post
location not reported



-Proposed, Command Post
(unoccupied)



-Defensive Position
(a closed curve
broken with a unit
size symbol)



-Defensive Position
Occupied with unit
known



-Defensive Position
Unoccupied, blocking
or supplementary
position, but unit
known



- Defensive Position
Unoccupied (unit known)
(shown with letter to
designate position Unit
may be designated by order
to occupy a specific
position)



-Attack Position
(a solid closed
curve labeled
BASE)



-Logistic Support Area
(a closed curved line
broken by the label
"LSA")



-Beach Support Area
(a solid closed
curved line broken
by the label *"BSA"*)



-Drop Zone
(solid closed curve
line with the label
"DZ" on inside)



-Landing Zone
(solid closed curved
line labeled *LZ* with
code name)



-Landing Site
(solid closed curve
line labeled *LS* with
color code)



-Marshalling area
(solid closed curved
line with the label
"MA")



-Tactical Area of
Responsibility
(a closed curved line
broken by the label
"TAOR")



- Free-Fire Area
(a solid black line labeled "Free Fire AREA" with establishing unit and normally showing date-time groups for commencement and termination)



- No-Fire Area
(a solid line enclosing an area with red diagonal lines running through it labeled "NO FIRE AREA" with establishing unit and normally showing date-time groups for commencement)



5. Portray "Directional Measures" by using the appropriate symbols:

- Helicopter Lanes Primary
(double lines labeled with code name)



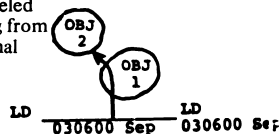
- Helicopter Lanes Alternate (double broken lines with code name)



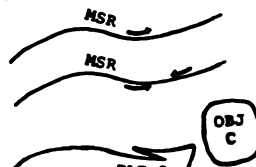
- Infiltration Lanes
(two solid lines labeled "Infiltration Lane" showing the infiltration unit in the center)



- Direction of Attack
(a narrow unlabeled arrow extending from the LD to the final objective)



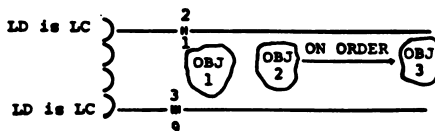
- Main Supply Route
(a line labeled "MSR" with arrows depicting a direction of traffic flow)



- Axis of Advance
(a broad arrow using a code name or unit designation and extending from LD to the objective)



- On Order Arrow
(a short straight arrow labeled "ON ORDER" extending from an objective in the direction in which the attack will continue when so ordered)



RESOURCES:

FMFM 3-1 Command and Staff Action
FM 7-11 B 3/4 Soldier Manual for MOS IIB

TASK: PREPARE JOINT MESSAGE FORM (G-0369-25.4/SSgt)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: NTP 3 Supp-1(), message addresses, security classification, message contents, a blank Joint Message Form (DD form 173) and other administrative materials.

STANDARDS: You will prepare a message that is correct in content according to mission requirements and correct in format.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:

A. Fill in blocks of Joint Message Form assigning security classification 1 .
Use OPNAVINST 5510.1C

PAGE NUMBER ②

(Use Section 2, Chapter 2 Pg 1.)

AND PRECEDENCE ③

Examples:	Codes
Emergency	YY
Flash	ZZ
Immediate	OO
Priority	PR
Routine	RR

JOINT MESSAGE FORM		SECURITY CLASSIFICATION	
CLASSIFICATION		CONFIDENTIAL	
②	③	④	⑤
01-01	001302Z	APR 83	RR
CCCC		130130Z	
NAVTELCON WASHINGTON DC		NOTE: Assigned by Tele Com Center	

(Use Section 1, Chapter 3 Pg 1.)

- Fill in Class ④ (Use Section 2, Chapter 2 Pg 1.)

- Fill in Orig Msg Indent ⑤ (Use Section 2, Chapter 2, Pg 4.)

- Time Group (Assigned by Telecom Center)

B. Prepare heading of message, including any information addresses ⑥
(Use Section 2, Chapter 3) and (NTP 3 Supp-1 Pg 1.)

- Classification Line ⑦ (Use Section 2, Chapter 4.)

⑥	FROM COMNAVTELCON WASHINGTON DC	NOTE: Assigned by Tele Com Center
	TO CNO WASHINGTON DC	
	CINCLANTFLT NORFOLK VA	
⑦	CONFIDENTIAL //NO2317//	
	SUBJ: [REDACTED] LINE AND TEXT (U)	

C. Prepare body of message ⑧

- No more than 69 characters to each line and 20 lines to each page
(Use *Section 1, Chapter 6*)

D. Fill in drafter and release name, grade, etc., as required ⑨.
(Use Section 2, Chapter 2 Pg 5)

E. Write in any special instructions (10)
 (For example, Copy to: S-1,
 S-2, S-3, S-4)
 (Use Section 2, Chapter 2 Pg 5)

F. Repeat security classification in designated blocks (11).

G. Deliver completed message to S-3 (for typing).

FROM: CNO WASHINGTON DC
TO: CNO WASHINGTON DC
CINCLANTFLT NORFOLK VA

C O N F I D E N T I A L //NOB215//

SUBJ: CLASSIFICATION LINE AND TEXT (C)

A. NTP-3 SECTION DE

B. COMNAVTELCON WASHINGTON DC 200832 APR 83

C. (C) THIS MESSAGE ILLUSTRATES CORRECT CONSTRUCTION AND TYPING PROCEDURE AS DESCRIBED IN PARAGRAPHS DE-DN.03D0 THROUGH DE-DN.07D0. NOTE THE FOLLOWING:

A. (C) SEQUENCE OF TEXT ELEMENTS.

B. (C) CLASSIFICATION MARKING OF SUBJECT LINE, PARAGRAPHS AND SUBPARAGRAPHS.

C. (C) DOWNGRADING/DECLASSIFICATION INSTRUCTIONS.

D. (C) REFERENCE B ILLUSTRATES CORRECT CONSTRUCTION OF MESSAGE REFERENCES.

CONFIDENTIAL FOR ILLUSTRATIVE PURPOSES ONLY THIS PAGE IS UNCLASSIFIED

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NOTE: Date-time group is normally assigned by the communications center. Local SOP will dictate whether or not the drafter will fill in DTG.

JOINT MESSAGEFORM		CONFIDENTIAL		①	
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RESOURCES:

NTP Telecommunications User's Manual
NTP Supp-1 (1) Plain Language Address
Directory
OPNAVINST 5510.1C

TASK: MAINTAIN S-3 JOURNAL (G-0369-25.5/SSGT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: journal sheets, written or oral orders, incoming messages and reports and other administrative materials.

STANDARD: The journal will be maintained so that operations personnel reviewing the journal and supporting documents will be provided with a word picture of the operational events that have occurred during the Marine's watch.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:

A. Make entries on journal sheet as information becomes available.

1. Complete Heading.

(a) Fill Out *Unit or Section* (see visual on following page):

- Enter designation of unit if this is a unit journal for regiment, air group, or smaller unit.
- Enter designation of section if this is a section journal maintained by a general staff section.

(b) Fill Out *Place* (see visual on following page):

- Enter grid coordinates or name of location.
(You will need map skills to find this number.)
- Look on the map to find where *command post* (CP) is located.
- For example: TA is the 100,000-meter grid square designator.
649732 is the 1,000-meter grid square designator.

(c) Fill Out *From* (see visual on following page):

- Enter date, time, and time zone that journal is opened.
- Look at your watch and write the time the journal is opened.
- Use the time zone designated in the operation order.
- For example: Day 02; Time 0001; Time Zone Z; Month Jan; Year 86.

(d) Fill Out *To* (see visual on following page):

- Enter date, time, and time zone that journal is closed.
- Look at your watch and write the time the journal is closed.
- For example: Day 02; Time 2400; Time Zone Z; Month Jan; Year 86.

- Use the time zone designator in the operation order.
- For example: Day 02; Time 2400; Time Zone Z; Month Jan; Year 86.

JOURNAL
FORM 717-65 (REV. 5-43)
SUPERSEDES 7-57 AND 8-36 EDITIONS WHICH WILL BE USED

1 2 3
(Classification)

4

5

DATE OF SECTION
a. 1st Bn, 1st Mar S-3

PLACE
b. TAL 49732

FROM (Date and hour)
c. 020001Z Jan 86

TO (Date and hour)
022400Z Jan 86

TIME		SERIAL NO.	DATE TIME GROUP	INCIDENTS, MESSAGES, ORDERS	ACTION TAKEN	
IN	OUT				M-Map S-Self	T-Transp P-File
	0501	1	020800Z	OPORD ISSUED		S.T.F
	0745	2	020750Z	Commenced Assault		M.S.T.F
0830		3	020840Z	Contact Red Beach		M.S.E
0930		4	020930Z	A 1 st Mar Seized Obj 2		M.S.E

2. Complete Body.

a. Fill Out Time: 1

- Time In:

- Unit Journal

Enter time information is received within unit. In most instances, this would be *Time of Receipt* (TOR) at unit communications center.

- Section Journal

Enter time outgoing message is delivered to originator's communications center for transmittal, or time information is transmitted by releasing section.

- Time Out:

- Unit Journal

Enter time outgoing information is delivered to addressee. In most instances this would be *Time of Delivery* (TOD) by unit communications center.

- Section Journal

Enter time outgoing message is delivered to originator's communications center for transmittal, or time information transmitted by releasing section.

b. Fill Out Serial No: 2

- Number each entry consecutively as information is received by keeper of journal.

- Enter *Date Time Group* (DTG) of radio messages. 3

- Place Day 02, Time 0500, Zone Z.

- Look at your watch and write the time the radio message is received.

- For example: Day 02; Time 0500; Zone Z.

c. Fill Out *Incidents, Messages, Orders*: 4

- Record important incidents, messages and orders, as they are made known.

NOTE: Although brief, entries must include all vital elements of information, such as what, where, when, how and who.

- Supplement or correct original entries (do not alter) or by later entries when necessary.
- Enter a synopsis of written or oral messages in the journal, leaving the full account for the journal file and other supporting documents.
- Reduce oral messages to writing and process as written messages.

d. Fill Out *Action Taken*: 5

- Indicate administrative action taken such as routing to cognizant unit staff officer(s), dissemination or pertinent information, and/or filing of message.
- Use these symbols to indicate action taken: "M," posted on situation map; "S," circulated to unit staff; "T," information disseminated to troops or subordinate units; "F," filed in journal file.

3. Edit:

- Summary:

Enter a brief summary of major activities, with reasons underlying decisions, at the close of each day. This is written in narrative form under the column entitled "Incidents, Messages, Orders."

- Closing:

Close Journals daily or at the end of periods or phases prescribed by higher authority.

B. File messages, orders and other supporting documents in journal file.

The journal file is considered as part of the journal. It includes: messages, orders, records of conversation, and other documents supporting journal entries.

1. Insert journal sheet in appropriate part of journal file.
2. Insert messages, orders, records of conversation, and other documents into the Incoming and Outgoing part of journal file.

C. Index and keep current S-3 worksheets.

- Check with unit SOP.

D. Cross-reference entries on journal sheet and worksheet to documents in journal file.

NOTE: Do this only if a journal entry answers a previous journal entry message.

1. Look in the DTG column of journal sheet for number of previous journal message.
2. Write that number in parenthesis () after the message that answers (the previous message) in the Incidents, Messages and Orders column.

RESOURCES:

TASK: SELECT 81mm MORTAR POSITION (G-0369-26.1/SSGT)

CONDITIONS: Conditions are determined by mission requirements. You, acting as the section leader are provided: map compass, binoculars and field radio.

STANDARD: The section leader must select a position that provides cover and concealment as well as affords proper drainage and resupply. The position must allow for mask and overhead clearance and 30-35 meters dispersion between squads. It must also facilitate rapid displacement.

BATTLE DRILL(S): 28, 30

PERFORMANCE STEPS:**A. Conduct reconnaissance.**

1. Pick area which provides maximum coverage for unit you are supporting.
 - Locate section near the center of sector to permit maximum coverage.
 - Locate as far forward as situation and terrain permit.
 - Locate section far enough behind the *mainline of resistance (MLR)* to provide fires within the battle areas and:
 - Support the reserve element in a counterattack role.
 - Support the reserve when it is used as a blocking force.
2. Select cover and concealment.
 - Locate defilade to protect it from direct fire weapons.
3. Check for mask and overhead clearance.
 - Locate section far enough to rear of hill mass so mortars are not limited in their ability to depress the barrel to minimum elevation (maximum range).
 - Use natural camouflage.
 - Overhead clearance is necessary and may require the trimming of tree limbs.
4. Insure dispersion between squads.
 - Select mortar positions which should allow 35-40 meters of lateral and staggered dispersion.
 - Look for selections firing a parallel sheaf approximately 100 meters wide.
5. Choose firm ground and access roads.
 - Pick areas that are well-drained with soil conditions that support vehicle movement and prevent excessive settling of the base plates.
 - Select positions that have access roads near them.
6. Set up security.
 - Select position near the reserve element in the defense.
 - Remain with or close to the main body during movement.

B. Determine initial direction of fire.

NOTE: Priority of fire will determine Initial Direction of Fire from Battalion Commander's intent.

- See ISSUE 60MM MORTAR FIRE COMMAND (G-0341-19.7) Step A.

C. *Select primary position.*

Align position so that a parallel sheaf is parallel to the *MLR*.

D. *Select alternate and supplementary positions.*

Choose alternate and supplementary positions that are to be shown to each member of the section.

1. Considerations for alternate positions:

- Any position from which the same mission can be fired
- Positions sufficiently removed from primary position to minimize effects of enemy fire directed at primary position
- Routes from primary to alternate positions and from alternate to supplementary positions should be in defilade and afford security in route

2. Considerations for supplementary positions:

- Necessary only when it is anticipated that a mortar unit may be required to fire a mission in addition to or in lieu of its primary mission that cannot be fired from the primary position
- Routes from primary and alternate positions should be in defilade and provide security

RESOURCE:

FM 23-90, 81mm Mortar

TASK: LAY 81mm MORTAR SECTION PARALLEL (G-0369-26.2/SSgt)

CONDITIONS: Conditions are determined by mission requirements. You, acting as section leader, are provided: 81mm mortar section and M2 compass.

STANDARD: Mortars must be positioned with 30-35 meters between guns. Guns must be numbered right to left, facing in the direction of fire. Section must be laid parallel within 7 minutes. You must demonstrate proficiency in all 3 methods of laying the mortar. The training steps must be performed sequentially.

BATTLE DRILL(S): 28**PERFORMANCE STEPS:***Compass Method*

NOTE: The compass method is the most rapid but least accurate method of laying the mortars parallel.

A. Align base gun on desired azimuth.

1. Squad Leader

- Places a baseplate stake to mount the exact location of mortar, before mounting mortar.

2. Section Leader

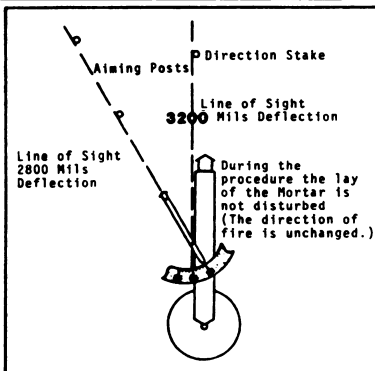
- Says: MOUNT MORTARS, MAGNETIC DIRECTION FIVE SIX HUNDRED (or any direction desired).

3. Squad Leader

- Places compass on top of baseplate stake.
- Orients compass on the desired direction (5600 mils for example).
- Sights through compass and directs an ammunition man to place a direction stake approximately 25 meters from baseplate stake, aligned on the given direction.

4. Squad

- Mounts this mortar and lays on the direction stake with deflection of 3200.



NOTE: Mortars are approximately parallel to direction of fire.

5. Section Leader

- Says: PLATOON DEFLECTION TWO EIGHT HUNDRED, PLACE OUT AIMING POSTS.

6. Ammunition Bearer

- Places two aiming stakes at 100 meters and 50 meters with LEFT edge of the stakes aligned with the verticle cross hair in the sight.
- Shortens distance between stakes if the terrain does not allow enough room for stakes to be placed at 100 meters.

NOTE: The nearest stake must be one half the distance to the far stake.

5. Set remaining gun on desired azimuth using same compass.

Section Leader

- Moves to each mortar position.
- Places his compass on baseplate stake.
- Directs the Ammunition Bearer in placing the direction stake.

Sight Method

C. Align base gun on desired azimuth.

NOTE: The base gun should be in front of the other guns.

1. Lay mortars parallel by using their sights.
2. Emplace mortars so that all sights are visible from base mortar.
3. Lay base mortar in the desired direction of fire with a compass or by actually adjusting fire on a registration point or target.

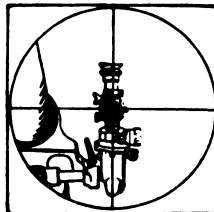
D. Refer remaining gun to lens of base mortar.

1. Section Leader

- Moves to sight of base mortar and says
AIMING POINT, THIS INSTRUMENT.

2. Gunners of remaining mortars

- Refer their sights to sight of base mortar and says **AIMING POINT IDENTIFIED.**



3. Section Leader

- Refers the sight of base mortar to lens of one of the remaining mortars.
- Reads the deflection of the base mortar sight and computes a back azimuth and says **NUMBER ONE, DEFLECTION ZERO NINE TWO.**
- Places direction and aiming stakes as described in Compass Method.
- Repeats this procedure for each mortar.
- Confirms each mortar's lay by section leader, again referring to each mortar sight.

NOTE: A 2 mil difference is acceptable (plus or minus). If guns are realigned, don't move basegun.

Aiming Circle Method

E. Mount and level aiming circle.

NOTE: Make sure aiming circle is functional.

1. Place aiming circle to the left rear or left front of the mortar position.
2. Place aiming circle away from magnetic attractions, using the following distances:
 - High tension powerlines—150 meters
 - Electronic equipment—150 meters
 - Railroad tracks—75 meters
 - Tanks and trucks—75 meters
 - Barbed wire—30 meters
 - Mortars or telephone wires—25 meters
 - Helmets, rifles, etc.—10 meters

Aiming Circle Method

3. Lay ground-mounted mortars.

- Operator leaves helmet, rifle, and web gear at least 10 meters from aiming circle.
- Mount aiming circle at least 25 meters from mortars.

4. Set up aiming circle.

- Unstrap tripod legs.

NOTE: One tripod leg should face the gun line and the other two tripod legs should be to the left and right of you.

- Loosen leg clamp thumbscrews.
- Extend the legs so that the tripod is approximately chest high.
- Spread tripod legs approximately 18 inches apart. With foot, force the tripod feet firmly into the ground.
- Adjust leg by loosening leg clamp thumbscrew on one leg until tripod head is approximately level.

5. Remove tripod head cover by reaching between legs and unscrewing tripod guide screw assembly.

NOTE: Before firmly seating the aiming circle you need to ensure that the ring on the bottom of the aiming circle is not overlapping the edge of the tripod head.

6. Open the baseplate cover of the aiming circle, place it on the tripod head, and thread the tripod guide screw assembly into the aiming circle head until firmly seated.

NOTE: Make sure the notation pad is facing you when you attach the aiming circle to the tripod head.
Do NOT drop the aiming circle head.

7. Remove the aiming circle head cover.

- Pull out and down on the strap between the cover latch and strap guide.
- Remove the cover and hang it on the tripod circle cover (*see visual on the next page.*)

8. Set aiming circle over an exact point.

- Attach the plumb bob (found in the accessory kit) to the tripod guide screw assembly.
- Small adjustments are made (to place the plumb bob over the point) by loosening the guide screw and sliding the aiming circle head around on the tripod head.

9. Level aiming circle.

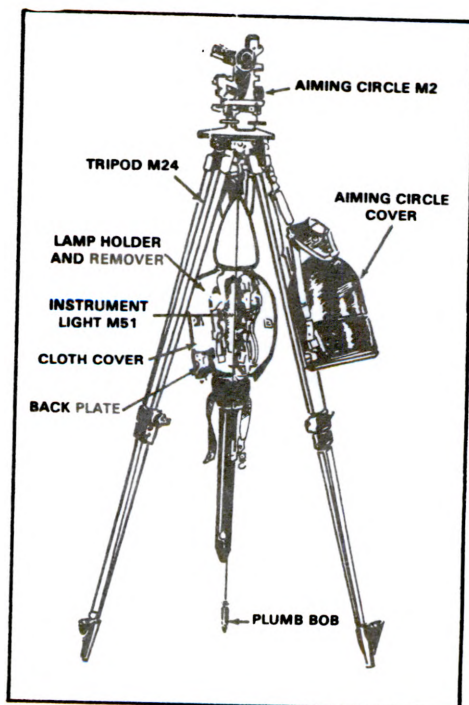
- To Rough Level

- Lengthen or shorten the tripod legs until the bubble in the circular level vial is centered.

NOTE: If time is critical, mortars can be laid with only the circular level vial level.

- Complete leveling the aiming circle.

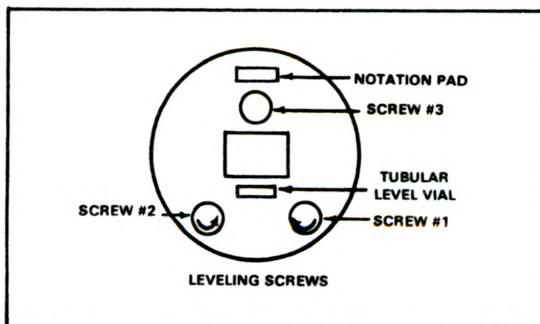
- Loosen the leveling screws enough to expose $\frac{3}{8}$ to $\frac{1}{2}$ inch of threads on the three leveling screws to permit the aiming circle to be leveled.



- Number the leveling screws 1, 2, and 3 (See visual at right.)

- Place tubular level vial between leveling screws 1 and 2. (To turn the upper motion of the aiming circle, pull out gently on the azimuth knob. This will disengage the gears and allow rapid movement of the upper motion.)

- Grasp leveling screw number 1 between the thumb and forefinger of the left hand. Turn the screws so that the thumbs move toward or away from each other. The bubble will move in the same direction as the left thumb. Using these two screws center the bubble.



- Rotate the aiming circle again using the upper motion, and center the tubular vial in between screws 2 and 3. Using only screw number 3, center bubble.

NOTE: The bubble should remain level in any direction that the aiming circle is rotated.

- Aiming circle is ready to orient or declinate.

F. Set micrometer and azimuth scales.

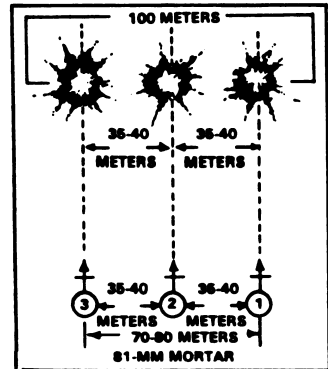
NOTE: Mortar section normally fires a parallel sheaf. (See visual directly below.)

1. Lay mortars parallel to get this sheaf.

- When section moves into firing position, azimuth is determined by *Fire Direction Center* (FDC) as to which section is to be laid, and FDC notifies aiming circle operator.
- Mortars are then laid parallel using aiming circle.

2. Lay section parallel:

- Establish the 0-3200 line of aiming circle (reciprocal laying).
- Lay the section parallel to the 0-3200 line of the aiming circle (reciprocal laying).



3. Orient aiming circle

- The FDC normally directs the section leader to lay the mortars parallel on a mounting (grid) azimuth.
- For example, the Section Leader receives the command, MOUNTING AZIMUTH 5550 MILS, from the FDC.

Example of orienting aiming circle

- The mounting azimuth is 5550 and the aiming circle has a declination constant of 0450 mils.
- To determine the data to place on the aiming circle, the mounting azimuth must be subtracted from the declination constant.
- If the declination constant is LESS than the mounting azimuth, ADD 6400.
- The mounting azimuth is then subtracted.

Declination Constant	...0450 mils
	+6400 mils
	6850 mils
Minus the mounting (grid) azimuth	-5550 mils
Remainder to set on aiming circle.	1300 mils

- Mount and level aiming circle at a point from which the aiming circle operator can see the sights of all the mortars in the section (usually the left front or left rear of the section).
- Set the remainder (1300) on the azimuth and micrometer scales of the aiming circle (recording motion).

G. Center magnetic needle.

Use nonrecording motion and center the magnetic needle in magnetic needle magnifier.

NOTE: This orients the 0-3200 line of the aiming circle in the desired direction (mounting azimuth 5550).

H. Say: SECTION, AIMING POINT THIS INSTRUMENT.**1. Gunner**

- Refers his sights to the aiming circle with the verticle crossline laid on the center of the aiming circle lens.
- Gunner says: No. 2 (or 1) AIMING POINT IDENTIFIED.

2. Aiming circle operator

- Lays the mortar sight and mortar barrels parallel to the 0-3200 line of the aiming circle.
- Turns the upper motion of the aiming circle until the verticle crossline is laid on the center of the lens of the mortar sight.
- Reads the azimuth and micrometer scales and announces the deflection: For example, No. 2, DEFLECTION 1998

3. Gunner

- Repeats the announced deflection by saying, No. 2, DEFLECTION 1998. Sets deflection on his sight.
- Lays mortar (aided by assistant gunner, so that the verticle line is on the center of the aiming circle lens).
- Checks to ensure the bubbles are level.
- Gunner says, No. 2, READY FOR RECHECK.

4. Aiming Circle Operator

- Lays the verticle crossline of the aiming circle on the lens of the sight, using the upper motion of the aiming circle.
- He reads the new deflection from the azimuth and micrometer scales and announces the reading. For example, No.2, DEFLECTION 2000.

5. Gunner

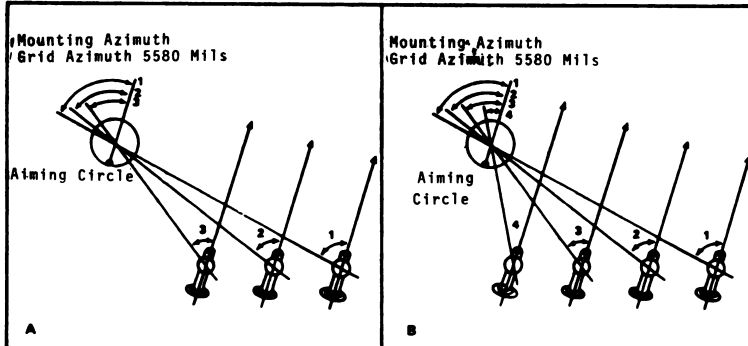
- Repeats the new deflection (No. 2, DEFLECTION 2000) and sets it on his sight.
- Lays the gun (aided by the assistant gunner) with the verticle crossline of the sight on the center of the aiming circle lens and announces No. 2, READY FOR RECHECK.
- Procedure is repeated until the mortar sight and the aiming circle are sighted on each other with a difference of not more than ONE mil between the deflection readings.
- Says No. 2, ZERO MILS (ONE MIL) MORTAR LAID.

NOTE: The barrel is now laid parallel to the 0-3200 of the aiming circle.

6. Aiming Circle Operator

- Uses the same procedure as the gunner to lay each of the other mortars in the section parallel.

NOTE: When all mortars are parallel to the 0-3200 line of the aiming circle, they are parallel to each other and laid in the desired azimuth (See figure.)



NOTE: The section can be laid parallel rapidly by laying all mortars simultaneously. The instrument operator reads deflections to each mortar in turn. As soon as the gunner of any mortar announces **READY FOR RECHECK**, the aiming circle operator reads the new deflection to that mortar. By laying all mortars at the same time, the section is ready to fire in little time.

- As soon as each mortar is laid, the aiming circle operator commands, **DEFLECTION 2800, REFER, PLACE OUT AIMING POSTS.**

NOTE: The aiming posts are normally placed out on a deferred deflection on 2800 mils.

7. Gunner

- Sets the announced deflection of his sight and aligns the aiming posts with the verticle line of the mortar sight without disturbing the lay of his mortar.
- Says, **GUN-UP**

RESOURCES:

MC1 Course 03.22, The 81mm Mortar Crewman
FM7-11C2 Soldier's Manual for MOS Skill Level 2

TASK: ISSUE 81mm MORTAR FIRE COMMANDS (G-0369-26.3/SSgt)

CONDITIONS: You, being evaluated, and acting as section leader are provided: mortar section and instructions from FDC.

STANDARD: The fire command must be issued within two minutes. The initial fire command must include all necessary elements. The elevation must always be given. The subsequent fire command must always include elevation. Elements of training step A must be performed sequentially.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:**A. Issue initial fire command.**

NOTE: Give orally whenever practicable, use telephone, radio, or arm-and-hand signals.

Steps:

You Say:

1. Indicate Mortars to Follow:
- Alert the firing unit.

SECTION/PLATOON,
FIRE MISSION

- Designate which weapons of the firing section/platoon will follow command.

NUMBER ONE (single mortar)
or
NUMBER ONE AND TWO
(combination of mortars)

2. Indicate Type of Ammo/Fuze:

- Type of ammo determined by (*Fire Direction Center FDC*) with regard to call for fire from the (*Forward Observer FO*) and the characteristics, amount, and type of ammunition and fuze available

HE, QUICK, HE, DELAY,
HE, PROXIMITY, WP, or
ILLUMINATING

3. Indicate Mortars to Fire:

- Designate the specific mortar or mortars which will fire.

NUMBER TWO (Single mortar)
or
NUMBER ONE

NOTE: Omit if mortar(s) to fire are the same as those announced in MORTARS TO FOLLOW.

*Steps:**You say:*

4. Indicate Method of Fire:

- Platoon Right (Left) Fire:
Mortars are fired success-
ively from a designated
flank at regular intervals
(normally 5 seconds).

PLATOON RIGHT (LEFT), ONE
ROUND, AT MY COMMAND

or

- Continuous Fire:
A series of platoon right
(left) fire is desired.

FIVE ROUNDS CONTINUOUS
FIRE FROM THE RIGHT (LEFT)
AT TWO ZERO SECONDS. AT MY
COMMAND

or

- Searching Fire:
A target in depth is engaged.

FIVE ROUNDS, SEARCH UP
TWO TURNS, AT MY COMMAND

or

- Traversing Fire:
A target in width is engaged.

FOUR ROUNDS, TRAVERSE
RIGHT THREE TURNS, AT MY
COMMAND

5. Indicate Deflection:

- The FDC designates direction
by announcing the deflection
to be placed on the sight.

DEFLECTION TWO EIGHT EIGHT
ZERO

6. Indicate Charge:

- Announce a charge with required
elevation.

CHARGE TWO

7. Indicate Fuze Setting:

- Announce the time of flight fuze
setting necessary to cause the
round to function at desired
height above the target.
- Announce variable fuze
delay, PD, proximity, etc.

TIME TWO ZERO POINT SIX
(for a fuze setting of
20.6 seconds)

8. Indicate Elevation:

- The FDC announces the elevation
to be placed on the sight, as
obtained from the firing table.

ELEVATION ONE TWO
THREE ONE

NOTE: The FDC does not announce a control element at the end of the fire command. The elevation element is the command to fire, unless the FDC specified otherwise in the method of fire element.

Completed Examples of Initial Fire Commands:

For a platoon using the base mortar
in adjustment:

You Say:

PLATOON
HE, QUICK
NUMBER FOUR
ONE ROUND
DEFLECTION TWO SEVEN FOUR FIVE
CHARGE THREE
ELEVATION ONE ONE EIGHT SEVEN

For a platoon firing for effect
using platoon right (left) fire:

You Say:

PLATOON
WP,
PLATOON LEFT
THREE ROUNDS AT MY COMMAND
DEFLECTION TWO SEVEN FOUR SIX
CHARGE FOUR
ELEVATION ONE ONE SIX FIVE

B. Notify FDC that guns are up.

- When the platoon is ready to fire, each section leader notifies the FDC that his guns are up.

You Say: GUN 1 AND GUN 2 UP.

C. Command to fire.

- The FDC says "STAND BY" then gives the command, "FIRE."

D. Issue subsequent fire command.

- Include all the elements in INITIAL FIRE COMMAND (except that the elevation is *always* announced).

Steps:

You Say:

1. Indicate Correction in Deflection.

CORRECTION:

- Give in mils.

DEFLECTION TWO EIGHT EIGHT FIVE

or

DEFLECTION TWO SIX FOUR ZERO

CHARGE FOUR

NOTE: When deflection is correct, this is omitted in the subsequent fire command.

- Announce the exact deflection placed on the sight, each time the deflection element is given.

2. Indicate Correction in Elevation.

ELEVATION ONE TWO THREE ONE

NOTE: Even if the elevation element is correct, repeat elevation again.

3. Check Firing and Suspend Firing.

Choose one of the two methods to stop firing:

- Check Firing Method.

- Announce when a fire mission is to stop because of tactical change or possible erroneous mission.
- Indicate that the mortar crew will remain on the alert and additional instructions are to follow.

- Renew firing by announcing a new fire command.
- Suspend Firing Method (comes from the FDC).
 - Announce when firing is temporarily stopped.
 - Resume firing by the command RESUME FIRING or by a subsequent command.

Completed Examples of Subsequent Fire Commands

For the adjusting mortar of a platoon:

You Say:

DEFLECTION TWO SEVEN SIX ZERO
ELEVATION ONE ONE EIGHT TWO

For a platoon (base mortar has completed adjustment and the FDC wants the platoon to fire for the effect).

You Say:

PLATOON
FIVE ROUNDS, AT MY COMMAND
DEFLECTION TWO SEVEN FOUR ZERO
CHARGE
ELEVATION ONE ONE NINE FIVE

E. Announce end of mission.

NOTE: Sections should automatically relay all mortars on the FPF and stand by for new mission.

Resources:

FM 23-90, 81 mm Mortar
MCI Course 03.22, The 81 mm Mortar Crewman

TASK: INSTALL/RECOVER HASTY PROTECTIVE MINEFIELD (G-0369-27.1/SSGT)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: an order to install/recover a hasty protective minefield; a map; a lensatic compass; a Hasty Protective Minefield Record; and a squad of Marines equipped with entrenching tools.

STANDARD: Install minefield to provide protection required/desired. Emplant mines so their locations can be kept under continuous observation. Hasty Protective Minefield Record must be completely and correctly filled out. Recover mines without causing detonation (simulated). Account for all mines. If minefield has not been kept under continuous observation, correct procedures to neutralize all mines.

BATTLE DRILL(S): 28

PERFORMANCE STEPS:

NOTE: Coordination with adjacent units is necessary before emplacing or recovering a hasty protective minefield.

A. Install hasty protective minefield.

1. Report intention and receive authorization to install minefield.
 - a. Request permission by secure means from company commander (who gets permission from battalion commander) to lay hasty protective minefield (*Report of Intention, STANAG 2036*).
 - Wait until you receive permission before proceeding.
 - b. When requesting permission include:
 - Type of minefield
 - Estimated number and types of mines
 - If mines are surface laid
 - If antihandling devices are used
 - Minefield location
 - Location and width of lanes and gaps
 - Proposed date and time for starting and completion
2. Emplace security personnel forward of the area to be mined.

Temporarily position protection in forward and rear areas or in isolated areas (e.g., outposts, working parties, roadblock defense parties).
3. Determine likely avenues of approach for infantry and/or armor.
 - a. Follow the method of employing a combined map and ground reconnaissance.

- b. From the ground reconnaissance determine:
 - Exact extent of proposed minefield site.
 - On-site enemy situation and possible routes of approach to the area.
- c. Visualize the minefield to determine where to emplace the mines.
- d. Determine the type of mine to be used and where:
 - Anti-personnel (AP) mines are located in likely avenues of approach for personnel.
 - Anti-tank (AT) mines are located in likely avenues of approach for tanks.

NOTE: Coordination with adjacent units is necessary before emplacing or recovering a hasty protective minefield. Mines must be metallic to afford easy detection.

- e. Call in your initiation report once you have decided where you want the mines laid and you are ready to begin laying mines.
4. Have the mines emplaced in rows.
- a. Allocate your manpower to install these mines by using either:
 - a portion of a squad to place the mines
 - or -
 - members selected from each squad
 - b. Emplace all mines in rows, but do not arm the mines until after they have **ALL** been recorded.

NOTE: Mines must be sited so that they can be continuously observed and covered by small arms fire.

5. Mark mine rows as each are begun and completed.

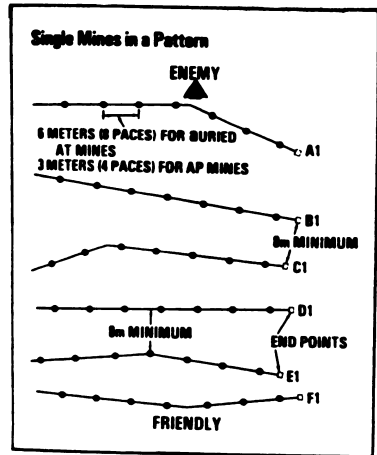
- a. Mentally visualize your field, running in rows, parallel to your defensive position.

NOTE: This will later make retrieval quicker and safer.

- b. Designate the row of mines closest to the enemy "A" and the succeeding rows "B", "C", etc.
- c. Emplace markers (e.g., wooden stakes, steel pickets, etc.) to show the ends of a row.
- d. Label each marker with the letter of the row; number 1 for the right end of the row and 2 for the left end of the row.

- e. Number the rows from right to left, facing the enemy.

NOTE: Markers are placed from 15 to 25 paces from the end mines in each row.



Example of minefield rows.

6. Determine azimuth of each row from an easily identifiable reference point.

- a. Find an easily identifiable reference point (RP) in front of your squad's position while the mines are being placed.
- b. From the RP, measure the azimuth in degrees with your compass, and pace the distance to the number 1 marker in the row nearest to you.
- c. Mark this point B1 (if employing two rows).
- d. From B1 measure the azimuth and pace the distance to the next row marker and label it appropriately (A1).
- e. Follow the preceding procedure for marking all end row markers when using more than two rows.

7. Record the minefield on the Hasty Protective Minefield Record.

- a. Use DA Form 1355-1-R to record the locations of your mines on the minefield.
- b. Measure the azimuth, using a lensatic compass, and pace the distance from an end row marker (A) to the first mine and plot/record it on the record form.
- c. Measure and record the azimuth, and pace from the first mine to the second, and so on, until all mine locations have been recorded.
- d. Give each mine a number to identify it in the tabular block located on the minefield record form.
- e. When the last mine location in the row (row "A" for example) is recorded, measure an azimuth and distance to the marker depicting the end of the row; label it A2 (15 to 25 paces beyond the last mine).

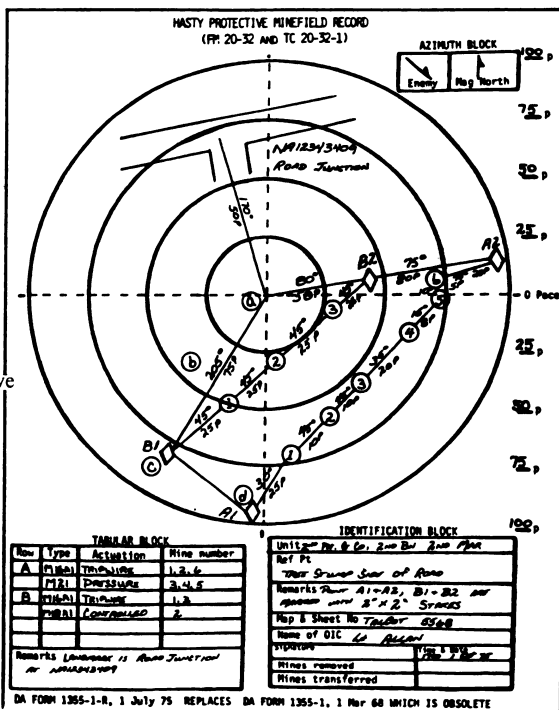
- f. After you have finished recording and marking the rows, measure the distance and azimuth from the reference point (RP) to B2 and from B2 to A2 and record them.

8. Record the minefield on map.

Tie in the reference point with a permanent landmark that can be found on your map. This will make it easier to find the minefield if the need arises. (Refer to example, recording the minefield on Hasty Protective Minefield Record, DA Form 1355-1-R, training step 7.)

9. Direct mines to be armed and camouflaged.

- a. Arm and camouflage the mines, working from the mine nearest the enemy back to the platoon position.
- b. Bury the M16A1 AP mines and camouflage the tripwires with grass and leaves.



(Example, Hasty Protective Minefield Record, DA Form 1355-1-R)

- c. Camouflage the firing wires of the M18A1 Claymore mines using grass or leaves; bury the wires whenever possible.

10. Recall security personnel as step 9 is being performed.

11. Report completion of minefield installation.

Now that the field is laid and the recording is done, call your Company Commander and report that you have completed the field.

B. Recover hasty protective minefield.

1. Study map and Hasty Protective Minefield Record.
2. Post security personnel.

Post security personnel to ensure they continuously observe and cover the mines by small arms fire.

CAUTION: IF MINEFIELD HAS NOT BEEN KEPT UNDER CONTINUOUS OBSERVATION, EACH MINE MUST BE UNCOVERED AND PULLED OUT WITH ROPE OR WIRE AND GRAPNEL.

3. Direct personnel to disarm and recover mines they emplaced, if possible.
 - a. Start at the reference point and move to B-1, using the azimuth and distances as recorded.
 - b. Move from B-1 to the first mine in row B. If B-1 is destroyed, move from the reference point to B-2, using that azimuth and distance.
 - c. Shoot the back azimuth from B-2 to the last mine (i.e., add or subtract 180 degrees from recorded azimuth).

NOTE: Stakes at A-1, B-1, A-2, and B-2 are necessary; it is safer to look for a stake than a live mine when traversing distances.

- d. Retrieve all mines in Row "B."
 - e. Move to A-1 (or A-2) using the azimuth and distance recorded on the form.
 - f. Retrieve the mines in Row "A" as you did in Row "B."
4. Remove mine row markers as each row is recovered.
 5. Recall security personnel.
 6. Report completion of minefield removal.
 7. Direct mines to be cleaned and redistributed among the squads.

RESOURCES:

FM 20-32, Mine/Countermine Operations at the Company Level
 TC 20-32-1, Hasty Protective Mining

TASK: DETONATE EXPLOSIVES USING DETONATING CORD (G-03XX-28.1/Pvt)

CONDITIONS: You will construct a detonating cord firing system which will detonate when fired. If any simulators are used, proper assembly of the firing system is the standard.

STANDARD: In a strictly controlled and supervised setting, you are provided: a demolition block, detonating cord, time blasting fuze, nonelectric blasting cap, fuze igniter, M-2 crimper and adhesive tape or string.

BATTLE DRILL(S): 21

PERFORMANCE STEPS:

A. *Wrap and tighten detonating cord around demolition block.*

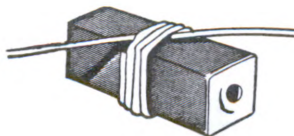
Select *TNT* or *Composition C4* and *C3* demolition blocks.

- *TNT*

Choose one of the following methods:

1. The Common Method

- Lay one end of a 4-foot length of detonating cord at an angle across the explosive.
- Wrap running end three times around the block and lay end at an angle.
- On the fourth wrap, slip the running end under all wraps parallel to the other end and draw tight.



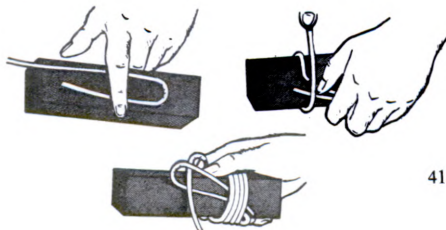
2. ALTERNATE NO. 1

- Tie detonating cord around the explosive block (on the top of the booster, if present) with a clove hitch with two extra turns.
- Fit the cord snugly against the blocks and push loops close together. (See visual)



3. ALTERNATE NO. 2 (Most preferred)

- Place a loop of detonating cord on the explosive with four wraps around the block and loop.
- Pull running end through the eye of the loop and tighten. (See visual.)



- *Composition C4 and C3 Demolition Blocks*

1. Form either of the two knots shown in figure.

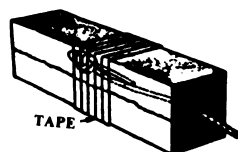


OVERHAND KNOT



TRIPLE ROLL KNOT

2. Insert the knot into block of explosive.
3. Insure that there is at least 1/2 inch on all sides of the knot.



B. Cut and discard the first 6 inches of time blasting fuze.

(This should only be done with one Marine if a group is being evaluated.)

- See DETONATE EXPLOSIVES NONELECTRICALLY (G-03XX-28.2), *Step A.*

C. Cut and determine burn rate of time blasting fuze.

- See DETONATE EXPLOSIVES NONELECTRICALLY (G-03XX-28.2), *Step B.*

D. Cut sufficient length of time blasting fuze to allow for safe exit from blast area to protected position.

- See DETONATE EXPLOSIVES NONELECTRICALLY (G-03XX-28.2), *Step D.*

E. Attach fuze igniter to time fuze.

- See DETONATE EXPLOSIVES NONELECTRICALLY (G-03XX-28.2), *Step E.*

F. Crimp blasting cap onto time fuze.

- See DETONATE EXPLOSIVES NONELECTRICALLY (G-03XX-28.2), *Step C.*



G. Tape or tie together the blasting cap to the looped end of the detonating cord.

1. Tie or tape blasting cap securely to the detonating cord.
2. Place blasting cap with closed end toward the charge.

H. Give warning.

Say three times, "FIRE IN THE HOLE."

I. Ignite fuze.

- See DETONATE EXPLOSIVES NONELECTRICALLY (G-03XX-28.2), *Step J.*

J. Take cover.

1. Refer to demo card for safe distance.
2. Walk to the safe area and take cover.

RESOURCES:

FM 5-25, Explosives and Demolitions
MCI 03.4, Landmine Warfare and Demolitions

TASK: DETONATE EXPLOSIVES NONELECTRICALLY (G-03XX-28.2/Pvt)

CONDITIONS: In a strictly controlled and supervised setting, you are provided: time blasting fuze non-electric blasting cap, fuze igniter, M2 crimper, length of string and a demolition block. If the demolition block has a threaded capwell, an M1A4 priming adapter is also required.

STANDARD: You will construct a detonating assembly and prime a demolition block which will detonate when fired. If any simulators are used, proper assembly of the firing system is the standard.

BATTLE DRILL(S): 21**PERFORMANCE STEPS:**

A. Cut and discard the first 6 inches of time blasting fuze. (This should only be done by one Marine if a group is being evaluated.)

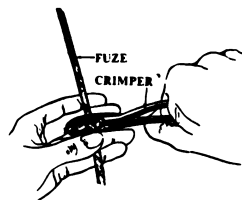
- Cut the fuze with M2 crimpers.

B. Cut and determine burn rate of time blasting fuze. (This should only be done once.)

Select fuze igniter method or nonfuze igniter method.

Fuze Igniter Method

1. Cut off 1 foot of time blasting fuze.
2. Insert time fuze into fuze igniter.
3. Light time fuze.



NOTE: - Time fuze is acceptable if it burns between 30-45 seconds per foot.
 - If time fuze does not burn at this rate, discard fuze and test another section.
 - M700 safety fuze must burn at rate of 40 seconds per foot.

Non fuze Igniter Method

1. Cut off 1 foot of time blasting fuze.
2. Split the end of the fuze.
3. Insert a match head into split.
4. Light the match with another match.
5. Notice the time it takes for the fuze to burn.
(See above NOTE.)

C. Crimp blasting cap onto time fuze.

1. Take one blasting cap from cap box and look into open end for foreign matter.
2. Discard cap if any foreign matter does not come out.

NOTE: - Do NOT tap cap with a hard object or blow into the cap.
 - Do NOT insert anything in the cap in an attempt to remove dirt or foreign material.

3. Hold the time blasting fuze vertically with the square cut end up.
4. Slip the blasting cap gently down over blasting fuze so that the flash charge in the cap is in contact with the end of the time fuze; if not in contact, it may misfire.

CAUTION: - Never force the time fuze into the blasting cap by twisting it.
 - If the end is too large to enter the blasting cap freely, roll it between the thumb and finger to make smaller.

5. After the blasting cap has been seated, grasp the time blasting fuze between the thumb and third finger of the left hand. (See visual to the right.)



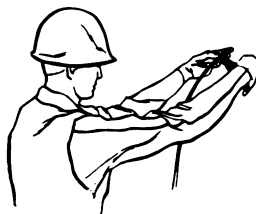
6. Extend the forefinger over the end of the time fuze.

- Keep a slight pressure on the closed end of the cap with the forefinger. (See figure, upper right.)

7. Slide the second finger down the outer edge of the blasting cap to guide the crimpers. By using this method, accurate crimping is obtained, even in darkness.

8. Crimp blasting cap at the point 1/8 to 1/4 inch from open end.

WARNING: A crimp too near the explosive end (closed end) of the blasting cap may cause detonation.
 - Point the cap out and away from the body.



Proper Position for Crimping the Blasting Cap

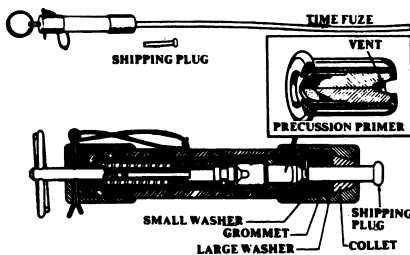
D. Cut sufficient length of time blasting fuze to allow for safe exit from blast area to protected position.

- Cut fuze long enough to permit the person detonating the charge to reach a safe distance by walking at a normal pace before the explosion.
- Cut squarely across the time fuze.

E. Attach fuze igniter to time fuze.

1. Unscrew the fuze holder cap two or three turns, but do NOT remove.

2. Press the shipping plug into the igniter to release the split collet (See figure) and rotate the plug as it is removed.



3. Insert the free end of the time fuze in place of plug until it rests against the primer.

4. Tighten the cap sufficiently to hold the fuze in place.

F. Attach priming adapter (if using demolition block with capwell).

1. Tape or wrap a string tightly around the block.

NOTE: Taping is more preferable than tying.



2. Tape or tie it securely. If using string, leave about 6 inches of loose string on the end after making the tie.
3. Insert blasting cap with fuze attached into capwell.
4. When using string, tie the loose string around the fuze to prevent the blasting cap from being separated from the block.

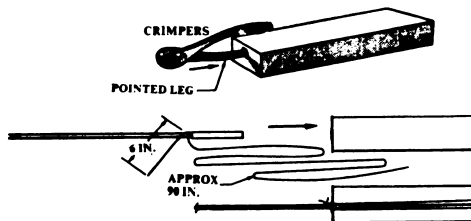
CAUTION: Do NOT tie string so tight that powder train is broken in the fuze.

G. If using demolition block with capwell, inspect capwell, then tighten priming adapter.

1. Look in capwell for obstructions.
2. If any are found, discard demolition block and replace with another block.
3. Screw priming adapter into capwell.

H. If using a demolition block without capwell, make a capwell and secure the detonating assembly to the demolition block.

1. Make a hole large enough to contain the blasting cap in the end of the block with a pointed nonsparking instrument or the pointed handle on the M2 crimper.
2. Using string, wrap several turns around the explosive and tie any type of knot.
3. Position the time fuze so it will be at the top of the hole when the fuze cap is inserted.
4. Insert fuze cap into hole.



WARNING: Never try to force a cap into a cap well that is too small.

5. Tie string around the time fuze at top of hole with two half hitches.

I. Give warning.

- Say three times, "FIRE IN THE HOLE."

J. Ignite fuze.

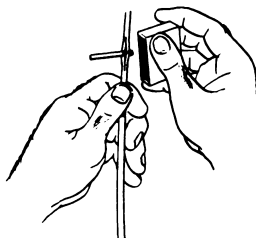
Select available fuze igniter method or nonavailable fuze igniter method.

Available Fuze Igniter Method

1. Remove safety pin.
2. Hold the barrel in one hand and pull on the ring with the other hand, taking up the slack before making final strong pull.

Non-available Fuze Igniter Method

1. Light the time blasting fuze with a match by splitting the fuze at the end.
2. Place the head of an unlighted match in powder train.
3. Light the inserted match head with a flaming match or by rubbing the abrasive on the match box against it.



K. Take cover.

1. Refer to demo card for safe distance.

2. Walk to the safe area and take cover.

RESOURCES:

FM 5-25, Explosives and Demolitions
MCI 03.4 Landmine Warfare and Demolition

TASK: DETONATE EXPLOSIVES ELECTRICALLY (G-03XX-28.3/LCpl)

CONDITIONS: In a strictly controlled and supervised setting, you are provided: firing wire, electric blasting cap, M51 blasting cap test set or a galvanometer, blasting machine, M-2 crimper and a demolition block. If the demolition block has a threaded capwell, an MIA4 priming adapter is also required.

STANDARD: You will construct a detonating assembly and prime a demolition block which will detonate when fired. If any simulators are used, proper assembly of the firing system is the standard.

BATTLE DRILL(S): 21**PERFORMANCE STEPS:****A. Make a capwell in the demolition block if it does not have one.**

- See DETONATE EXPLOSIVES NONELECTRICALLY (G-03XX-28.2), *Step H*.

B. Place the charge.

1. Place charges at position which will provide maximum effectiveness.

IF:**THEN:**

- Cratering

Place charge in holes.

- Breaking or collapsing stone or concrete.

Locate charge on the surface

- Cutting timber

Tie charge on the outside or place charge in boreholes.

2. Fasten charges.

- Fasten charges to the target by wire, adhesive compound tape, or string.

- Prop charge against target by using a wooden or metal frame made of scrap or other available materials.

- Place charge in boreholes.

3. Inspect tamping.

- Pack tamping material around charge to retain as much explosive force as possible for an *External Charge*.

- Confine tamping material to the borehole on top of the charge for an *Internal Charge* (placed in the target to be destroyed).

C. Lay out firing wire.

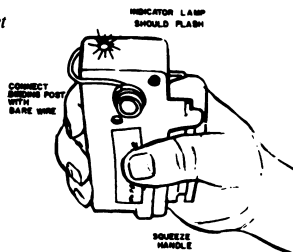
1. Locate a firing position a safe distance away from the charges.
2. Lay out the firing wire from the charges to the firing position.

D. Test firing wire using the M51 blasting cap set or the blasting galvanometer.

M51 Blasting Cap Set

1. Check test set by connecting the posts with a piece of bare wire.

NOTE: Indicator lamp should flash when handle is squeezed.

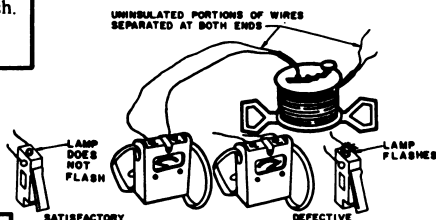


2. Separate the firing wire conductors at both ends and connect those at one end to the test set binding posts.
3. Actuate test set.

NOTE: Indicator lamp should not flash. If it does, the firing wire has a short circuit.

4. Twist the wires together at one end.
5. Connect those at the other end to the test posts.
6. Actuate test set.

NOTE: - Indicator lamp should flash.
- If it does not flash, the firing wire has a break.



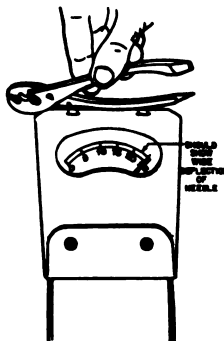
Blasting Galvanometer

1. Check galvanometer by holding a piece of metal across its terminals.

NOTE: If battery is good, this should show a wide deflection of the needle, approximately 25 units (twenty-five ohms).

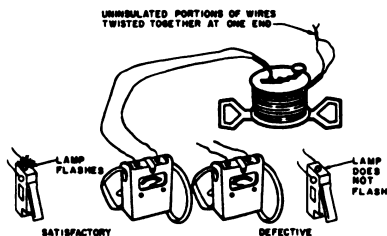
2. Separate the firing wire conductors both ends, and touch those at one end to the galvanometer posts.

NOTE: - The needle should not move.
- If it does, the firing wire has a short circuit.



- Twist together the wires at one end and touch those at the other end to the galvanometer posts.

NOTE: - This should cause a wide deflection of the needle (about 23 to 24 ohms for a 500-foot length.)
 - No movement of needle indicates a break.
 - Slight movement indicates a point of high resistance which may be caused by a dirty wire, loose wire connection, or wires with several strands broken off at connections.



E. Test blasting cap using the M51 blasting cap test or the blasting galvanometer.

M51 Blasting Cap Test Set

- Check the test set using procedures in testing firing wire.
- Remove the short circuit shunt from the lead wires of the electric blasting cap.
- Attach one cap lead wire to one binding post and tie the other cap lead wire to the other post.
- Squeeze the handle.

NOTE: - If indicator lamp flashes, the blasting cap is satisfactory.
 - If it does not flash, the cap is defective and should not be used.

WARNING: During the test, always point the explosive end of the blasting cap away from the body.

Blasting Galvanometer

- Check galvanometer using procedures to test firing wire.
- Remove the short circuit shunt.
- Touch one cap lead wire to one galvanometer post and the other cap lead wire to the other galvanometer post.

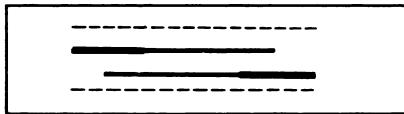
NOTE: - If galvanometer needle deflects slightly less than it did when instrument was tested in (1) above, the blasting cap is satisfactory.
 - If not, the cap is defective and should not be used.

WARNING: During the test, always point the explosive end of the cap away from the body.

NOTE: If the battery is fresh, the galvanometer should read 25 units (25 ohms) when the instrument is tested and about 24 units (about 2 ohms) when a good blasting cap is tested.

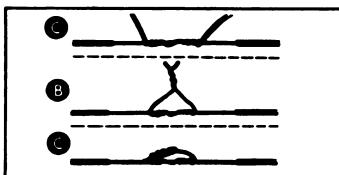
F. Splice blasting cap lead wire to firing wire.

1. Strip insulating material from the wire ends.
2. Expose about 3 inches of bare wire and remove any foreign matter (enamel) by carefully scraping the wire with the back of a knife blade or other suitable tools.



NOTE: The wires should not be nicked, cut, or weakened when the wires are pared, and multiple strand wires should be twisted lightly after scraping.

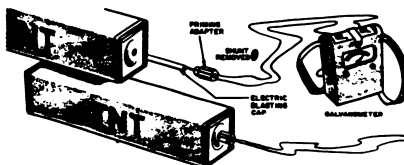
3. Splice blasting cap lead wire to firing wire as shown in figure at right.

**G. Secure blasting cap in demolition block.**

Secure blasting cap if a priming adapter is or is not available.

If a priming adapter IS available

1. Untwist the free ends of the lead wire and fasten them to the firing wire.
2. Pass the lead wires through the slot of the adapter and pull the cap into place in the adapter.
3. Insert the cap into the capwell of the explosive and screw the adapter into place.



If a priming adapter IS NOT available

1. Make a capwell if block does not have one. Use the same procedure for making a capwell as in DETONATE EXPLOSIVE NONELECTRICALLY (G-03XX-28.2/PVT), Step H.
2. Untwist the free ends of the lead wire and fasten them to the firing wire.
3. Insert the electric cap into the capwell and tie the lead wires around the block by two half hitches or a girth hitch.
4. Allow some slack in the wires between the blasting cap and the tie to prevent any pull on the blasting cap.

H. Test circuit using M51 blasting cap test set or the blasting galvanometer.

Blasting Cap Test Set

1. Connect the free ends of the firing wire to the binding posts.
2. Flashing lamp indicates functional circuit.
3. Non flashing lamp indicates defective circuit. Follow procedure find the defective firing circuit found below on the next page (Blasting Galvanometer, Step 3).

Blasting Galvanometer

1. Touch the free ends of the firing wire to the galvanometer posts.
2. Wide deflection of the needle indicates functional circuit.
—Magnitude of the deflection depends up on the number of caps and length of the firing wire.
3. No deflection indicates defective circuit. Follow procedure to find the defective firing circuit found below.

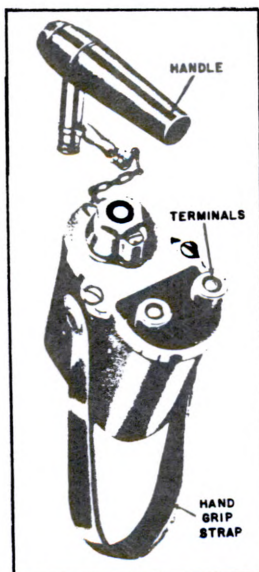
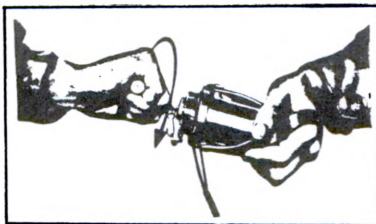
NOTE: To get a wide deflection of the needle, the galvanometer battery should be in good condition.

- Procedure for finding defective firing circuit:

- a. Shunt wires.
- b. Go downrange and recheck the circuit.
- c. Resplice the wires (if a splice is found defective).
- d. Continue to test all caps and wires in the circuit.
- e. Test the entire circuit again to make sure that all breaks have been located before attempting to fire the charge.
- f. Twist the free ends of the firing wire together.

I. Test blasting machine.
(*Ten-cap blasting machine—used for demolition work*)

1. Actuate the handle several times before attaching the firing wires.
2. Hold the machine securely in front of your body with your left hand.
3. Insert the handle with your right hand.
4. Actuate by giving the handle a vigorous clockwise turn as far as possible.



J. Connect firing wire to blasting machine.

- Fasten the firing wires tightly to the terminals of the blasting machine.

NOTE: One individual is detailed to fire the circuit. The blasting machine should be connected to the firing circuit only by the person so detailed. The individual should carry the machine, or at least its handle, on his person at all times during any activities related to blasting. This person should be the individual who either connects the blasting cap wires in the circuit or checks their connection by on-the-spot visual examination.

K. Give warning.

- Say (three times), "FIRE IN THE HOLE."

L. Take cover.

1. Refer to demo card for safe distance.
2. Walk to a safe area and take cover.

M. Detonate charge using threaded capwell and priming adapter.

1. Inspect the capwell for foreign material.
 - If foreign material is found, discard that demolition block and take another.
2. Untwist the free ends of the lead wire and fasten them to the firing wire.
3. Pass the lead wires through the slot of the adapter and pull the cap into place in the adapter.
4. Insert the lead wires through the slot of the adapter and pull the cap into place in the adapter.
5. Insert the cap into the capwell of the block and screw the adapter into place.

RESOURCE:

FM 7-11B1, Soldier's Manual Infantryman, Skill Level 1

TASK: CLEAR DEMOLITION MISFIRE (G-03XX-28.4/Pvt)**TRAINING OBJECTIVE 1:****BEHAVIOR: CLEAR A NONELECTRIC MISFIRE**

CONDITIONS: In a strictly controlled and supervised setting, you are provided: an electric or nonelectric demolition charge that has misfired, a demolition block, M-2 crimper, time blasting fuze, nonelectric blasting cap, fuze igniter, firing wire, electric blasting cap, M51 blasting cap test set or galvanometer and a blasting machine. If the demolition block has a threaded capwell, an MIA 4 priming adapter is also required.

STANDARD: You will construct a nonelectric or electric detonating assembly and prime a demolition block which will detonate. You will detonate the misfired charge when fired. If any simulators are used, proper assembly of the firing system is the standard.

BATTLE DRILL(S): 21

CLEARING A NONELECTRIC MISFIRE**PERFORMANCE STEPS:****A. Wait 30 minutes after the estimated time of explosion before investigating.**

- Proceed to the next step after waiting 30 minutes.

NOTE: Investigation and correction should be undertaken only by the individual that placed the charge.

B. Construct a nonelectric detonating assembly and prime a demolition block.

- See DETONATE EXPLOSIVES NONELECTRICALLY (G-03XX-28.2), reference steps A through H.

C. Place the demolition block on top of or alongside the misfired demolition.

- Choose one of the following 4 methods to clear the misfired charge:

IF:**THEN:**

- | | |
|--|--|
| 1. Misfire is not tamped | - Lay a primed one-pound charge at the side of the charge, without moving it or disturbing it.

- Fire. |
| 2. Misfire has no more than one foot of tamping | - Attempt to explode it by detonating a new 2-pound charge placed on top. |
| 3. Misfired charge is located in a tamped borehole, or if the tamped charge is situated to make method 2 impractical | - Carefully remove the tamping by means of wooden or nonmetallic tools.

- Avoid accidentally digging into |

IF:**THEN:**

3. Misfired charge is located in a tamped borehole, or if the tamped charge is situated to make method 2 impractical

- Check constantly the depth of the borehole from the ground surface to the top of the charge during digging.
- Note when charge has been uncovered within 1 foot.
- Insert and detonate a new 2-pound primer.

NOTE: Always use detonating cord to prime underground charges and put the blasting cap above the ground.

4. Alternate method of reaching a deep misfired charge

- Drill a new hole within 1 foot of the old one and to the same depth.
- Place a 2-pound charge in the new hole to detonate the misfired charge.
- Use extreme care in drilling the new hole to avoid striking the old misfired charge or placing the new charge too far away to induce detonation.

D. Give warning.

- Say three times, "FIRE IN THE HOLE."

E. Detonate charge.

- Ignite time fuze
- Fire

TRAINING OBJECTIVE 2:**BEHAVIOR: CLEAR AN ELECTRIC MISFIRE**

CONDITIONS: In a strictly controlled and supervised setting, you are provided: an electric or nonelectric demolition charge that has misfired, a demolition block, M-2 crimper, time blasting fuze, nonelectric blasting cap, fuze igniter, firing wire, electric blasting cap, M51 blasting cap test set or galvanometer and a blasting machine. If the demolition block has a threaded capwell, an M1A 4 priming adapter is also required.

STANDARD: You will construct a nonelectric or electric detonating assembly and prime a demolition block which will detonate. You will detonate the misfired charge when fired. If any simulators are used, proper assembly of the firing system is the standard.

BATTLE DRILL(S): 21**PERFORMANCE STEPS:****A. Check firing wire connections.**

- Check firing wire connections to the blasting machine or power source terminals to make sure that the contacts are good.

B. Attempt to fire the charge two or three more times.

- Use another blasting machine or power source if this does not work.

C. Disconnect and shunt the firing wires.

- Disconnect the blasting machine firing wire.
- Before moving to charge site, be sure that the firing wires at the power source end of the circuit are shunted to avoid any possible static electric detonation.

D. Check entire circuit for breaks or short circuits.

(Include the fire wire for breaks and short circuits.)

- If wire is bad, replace with new wire. If not, construct a nonelectric detonating assembly.

E. Construct a nonelectric detonating assembly and prime a demolition block.

- See DETONATE EXPLOSIVES NONELECTRICALLY (G-03XX-28.4); reference steps A through H.

***F. Place the demolition block on top of or alongside the misfired demolition.
(Reference Step C in Training Objective I.)***

G. Give warning

- Say three times, "FIRE IN THE HOLE."

H. Detonate the charge.

- Connect firing wires to blasting machine.
- Fire

RESOURCES:

FM 5-25, Explosives and Demolitions
MCI Course 03.4, Landmine Warfare and Demolitions

TASK: INSPECT M9, 9MM SERVICE PISTOL (G-03XX-29.1/PVT)

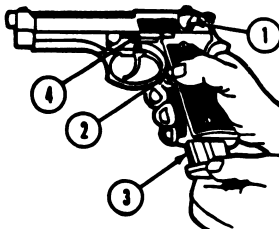
CONDITIONS: Conditions are determined by mission requirements. You will be provide: M9 9mm service pistol and magazines.

STANDARD: All discrepancies and defects must be identified. Step A must be performed first. The remaining steps are not sequential.

BATTLE DRILL(S): 1**PERFORMANCE STEPS:****A. Clear weapon.**

CAUTION: Point pistol in SAFE DIRECTION.

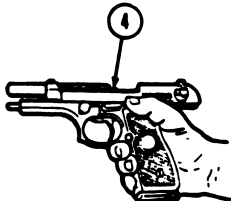
1. Press safety (1) in "safe" (DOWN) position.
2. Depress the magazine release button (2) to remove the magazine (3) from the pistol.
3. Grasp the slide serrations and fully retract the slide to remove the chambered cartridge.
4. Lock the slide to the rear using the slide stop (4) and visually inspect chamber to ensure that it is empty.

**B. Disassemble pistol.**

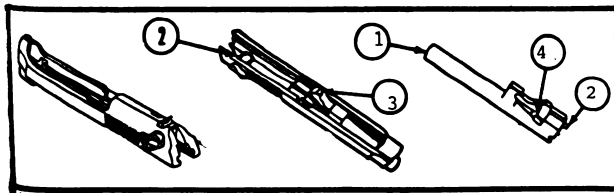
Reference: Maintain 9mm Service Pistol (G-03xx-29.2.2 Step B)

C. Check for rust, dirt, and cracks.

1. Look on outside of pistol for rust.
2. Check chamber (4) for rust, dirt or obstructions.
3. Check for pitted or damaged chamber.



- Inspect bore (1).
- Check locking block plunger (2).
- Inspect locking block (3).
- Inspect locking lugs (4).



Slide Assembly

Barrel Assembly

C. Check operation of moving parts.

NOTE: If equipment is not ready at any point, return pistol to organizational maintenance/next authorized repair level.

D. Reassemble pistol.Reference: **MAINTAIN 9MM SERVICE PISTOL (G-03XX-29.2 STEP 'C')****E. Check operation of moving parts.****NOTE:** If equipment is not ready at any point, return pistol to organizational maintenance/next authorized repair level.

<i>Item to be inspected:</i>	<i>You:</i>	<i>Equipment is ready if:</i>	<i>Equipment is not ready if:</i>
9mm Pistol	- Visually inspect the entire pistol for damaged or missing components.	No defects are found.	There are damaged or missing components.
Hammer	 - Place safety in safe position. Make sure slide is forward. - Place safety in fire position (shown) - Manually cock hammer. - Place safety in safe position.	Hammer does not move. Hammer does cycle. Hammer does fall.	Hammer moves to the rear. Hammer does not move to the rear. Hammer remains cocked.

Slide Stop

- | | | |
|--|---------------------------------|---|
| <ul style="list-style-type: none"> Place safety in fire position. Pull slide fully to rear while pushing up on slide stop. | <p>Slide does lock to rear.</p> | <p>Slide does not lock and slide returns to forward position.</p> |
|--|---------------------------------|---|

<i>Item to be inspected:</i>	<i>You:</i>	<i>Equipment is ready if:</i>	<i>Equipment is not ready if:</i>
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Magazine Assembly

1. Visually inspect for missing or damaged parts: floorplate, magazine tube, floorplate retainer, magazine spring and follower. See figure of disassembled magazine in **MAINTAIN M9, 9MM PISTOL (G-03XX-29.2), Step C.7.**

Magazine is free of damage.

There are missing or damaged parts.

2. Depress follower with finger and release.

Follower moves freely.

Follower does not return to uppermost position.

Magazine Catch Assembly

1. Insert an **EMPTY** magazine into magazine well until fully seated in place.

Magazine remains seated.

Magazine falls free.

CAUTION: Ensure magazine is **EMPTY** and pistol is on **SAFE** position.



2. Hold pistol in upright position and prepare to catch magazine.

3. Depress magazine release button.

Magazine is released.

Magazine is not released.

F. Check for lubrication.**CAUTION:** Ensure that pistol is clear.

Check lubrication for appropriate climatic conditions: extreme cold, hot wet climates, hot dry climates, heavy rain and fording operations - all climates.

IF:**THEN:****Extreme Cold**

1. Clean and lubricate the pistol inside at room temperature if possible.
2. Apply a light coat of lubricating oil, weapons (LAW) (81349) MIL-L-14107 1 qt can to all functional parts.
3. Keep the pistol covered when moving from a warm to a cold area. This allows for gradual cooling.
4. Always keep the pistol dry.
5. DO NOT lay a hot pistol in snow or ice.
6. Keep ammunition dry; moisture will cause malfunctions. Do NOT lubricate the ammunition.
7. Keep snow out of the bore of the barrel always. If snow should get into the bore, use a swab and cleaning rod to clean the bore before firing.

Hot, Wet Climates

1. Perform maintenance more frequently. Inspect hidden surfaces.
 - Inspect hidden surfaces for corrosion.
 - If corrosion is found, clean and lubricate.
2. To help prevent corrosion, remove handprints with a cloth.
3. Dry and lubricate the pistol with: Cleaner, Lubricant Preservative (CLP) (81349) MIL-L-63460 1/2 oz btl; Lubricating Oil, Weapons Semi-Fluid (LSA) (81349) MIL-L-46000 2 oz btl; and wipe with a cloth. If necessary, clean ammunition with a dry cloth.

Hot, Dry Climates

1. Keep pistol covered when possible.

NOTE: Dust, dirt and sand can get into pistol and cause malfunctions and excessive wear on component contact surfaces during firing.

2. Lightly lubricate internal working surfaces only with CLP/LSA.

IF:

THEN:

p. 5 of 5

NOTE: Corrosion is less likely to form on metal parts in a dry climate.
--

Hot, Dry Climates

- Do NOT lubricate external parts of the pistol.
- Wipe any excess lubricant from exposed surfaces.
- Do NOT lubricate internal components of magazine.

Heavy Rain and Fording
Operations - All Climate

1. Perform maintenance in accordance with the appropriate climatic conditions.
 2. Always attempt to keep pistol dry.
 3. Always drain any water from barrel before firing. Dry the bore with a swab and cleaning fluid.
 4. Generously lube internal and external surfaces of the pistol with CLP/LSA.
-

RESOURCE:

Marine Corps NT 1005A-1011, Pistol Semiautomatic, 9mm

TASK: MAINTAIN M9, 9mm PISTOL (G-03XX-29.2/Pvt)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: 9mm pistol, cleaning equipment, magazines (2), cleaning rod, holster, and magazine pouch. A qualified inspector must be present.

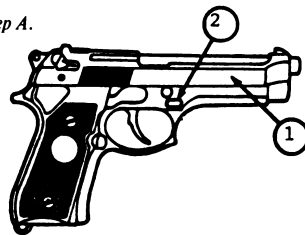
STANDARD: You will perform scheduled and preventive maintenance. You will clean the pistol using proper equipment, substances and detailed cleaning techniques. All authorized areas must be lubricated. Step A must be performed first. The pistol must pass inspection.

BATTLE DRILL(S): 28**PERFORMANCE STEPS:****A. Clear weapon.**

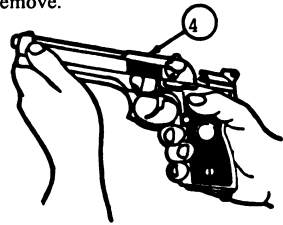
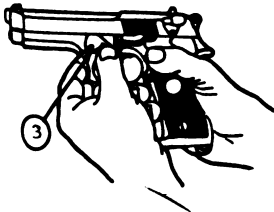
See INSPECT SERVICE PISTOL (G-03XX-29.1), Step A.

B. Disassemble pistol.

1. Allow slide ① to return fully forward.
2. Hold pistol in the right hand with muzzle slightly elevated.
3. With forefinger press disassembly lever release button ②.
4. With thumb rotate disassembly lever ③ downward until it stops.

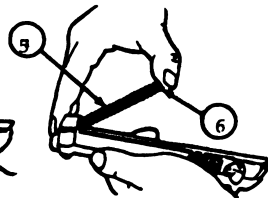
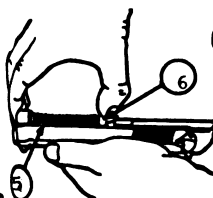


5. Pull the slide barrel assembly ④ forward and remove.

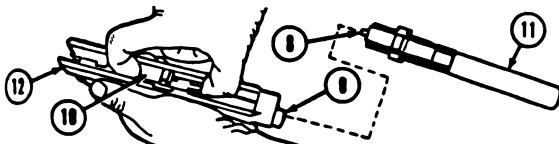


WARNING: For step 6 below, use care when removing recoil spring and spring guide. Due to the amount of compression, assembly will be released under spring tension and could cause possible injury to personnel or become damaged or lost.

6. Slightly compress recoil spring ⑤ and spring guide ⑥, while at the same time lifting and removing recoil spring ⑤ and spring guide ⑥. Allow the recoil spring to stretch slowly.



7. Push in on locking block plunger ⑩ while pushing barrel ⑨ slightly forward.
8. Lift and remove locking block ⑩ and barrel assembly ⑪ from slide ⑫.



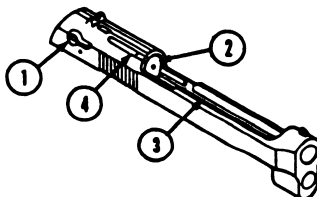
C. Clean, oil, lubricate pistol.

CAUTION: Bore brush is for cleaning bore only. Using the bore brush on any other part of the pistol will damage the pistol.

Clean, oil and lubricate the following:

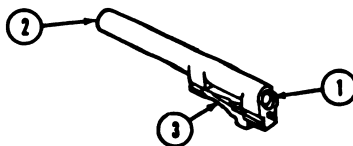
SLIDE ASSEMBLY

1. Clean slide with cloth.
2. Ensure the safety ①, bolt face ②, slide guides ③ and extractor ④ are free of excess dirt and residue.
3. Wipe dry with a cloth and apply a light coat of CLP/LSA.



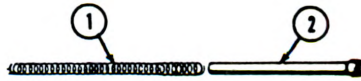
BARREL ASSEMBLY

1. Insert bore brush into chamber end ① of barrel, making sure brush completely clears the muzzle ② before it is pulled back through the bore.
2. Repeat the above step several times to loosen carbon deposits.
3. Dry the barrel by pushing a swab through the bore. Repeat as necessary until a clean swab can be observed.
4. Clean locking block ③ with a soft brush.
5. Apply a light coat of CLP/LSA to the barrel bore and chamber area.
6. Lubricate the exterior surfaces of the barrel and locking block.



RECOIL SPRING AND RECOIL SPRING GUIDE

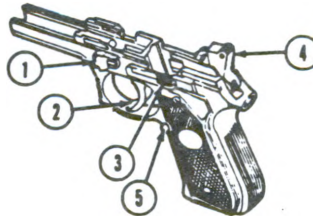
1. Clean recoil spring ① and recoil spring guide ② using CLP and a soft brush or cloth.
2. After wiping the recoil spring ① and recoil spring guide ② clean, apply a light coat of CLP/LSA.



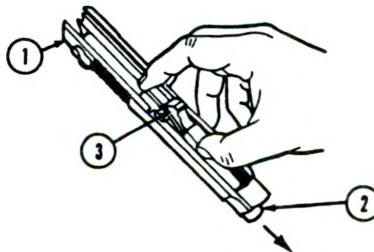
CAUTION: Do not allow the hammer to fall with full force by pulling the trigger when the slide is removed as damage to the receiver will occur. If the hammer is in the cocked position when the pistol has been disassembled, the hammer must be manually lowered by pulling the trigger and at the same time gently lowering the hammer with the thumb of the opposite hand.

RECEIVER

1. Wipe receiver assembly clean with cloth.
 - Use a soft brush for hard to clean areas.
 - Pay special attention to disassembly lever ①, trigger ②, slide stop ③, hammer ④, and magazine release button ⑤.
2. Apply a light coat of CLP/LSA.

**D. Reassemble pistol.**

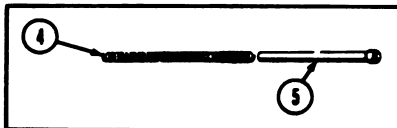
1. Grasp the slide ① with bottom facing up.
2. With the other hand, grasp the barrel assembly ② with the locking block ③ facing up.



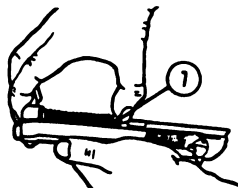
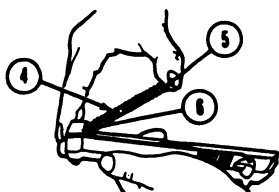
3. Insert muzzle of the barrel assembly ② into the forward open end of the slide ①. At the same time, lower the rear of the barrel assembly by slightly moving the barrel downward with light thumb pressure. The barrel will fall into place.

4. Insert recoil spring ④ onto recoil spring guide ⑤.

CAUTION: During spring insertion, spring tension must be maintained until spring guide is fully seated onto the cutaway on the locking block.

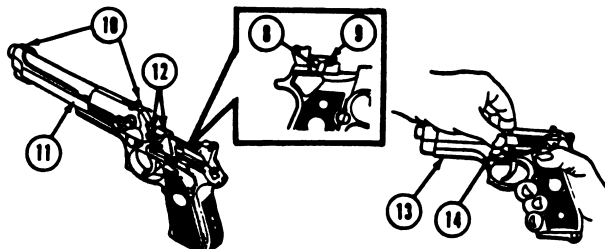


5. Insert end of recoil spring guide ⑤ into slide recoil spring housing ⑥. At the same time, compress the recoil spring and lower the spring guide until fully seated onto the locking block cutaway ⑦.



CAUTION: Be sure the hammer is uncocked and firing pin block lever is in the down position. If the hammer is cocked, carefully and manually lower the hammer. Do not pull trigger while placing the slide onto the receiver.

6. Push firing pin block lever down ⑧ (opposite ejector ⑨)
7. Grasp the slide and barrel assembly sights ⑩ up and align the slide ⑪ onto the receiver assembly guide rails ⑫.
8. Push until the rear of the slide ⑪ is a short distance beyond the rear of the receiver assembly ⑬ and hold. At the same time, rotate the disassembly latch lever ⑭ upward. A click indicates a positive lock.



E. Check functioning.

NOTE: If the parts perform as indicated during safety/function checks, pistol is mission ready. If the parts do not perform as indicated, evacuate to organizational maintenance/next authorized repair level.

1. With the safety in safe position, depress the slide stop allowing slide to return fully forward. At the same time, the hammer should fall to the full forward position.
2. Squeeze and release trigger. Firing pin block should move up and down. Hammer should not move.
3. Place safety in fire position.
4. Squeeze trigger to check double action.

NOTE: Hammer should cock and fall.

5. Squeeze trigger again and hold to rear. Manually retract and release slide while holding trigger to the rear. Release trigger, click should be heard, hammer should not fall.
6. Squeeze trigger to check single action. Hammer should fall.

F. Disassemble magazine, clean, oil, lubricate, reassemble (if necessary).

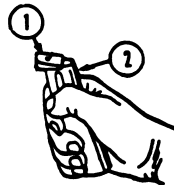
- Disassemble :

1. Grasp the magazine firmly with floorplate ① up and the back of the magazine tube ② against the palm of the hand.
2. Remove the floorplate by using the barrel locking block plunger or a hard pointed object such as a pen.



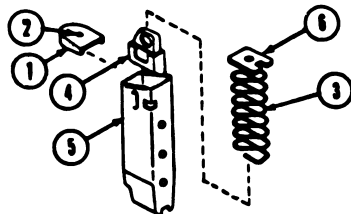
NOTE: If using pen, skip 'a' and go to 'b' below.

- a. Depress the locking block. The locking block plunger will protrude and can be used to release the floorplate.
- b. Release the floorplate ① by pushing down on the floorplate retainer stud ② in the center of the floorplate ①.
- c. At the same time, slide the floorplate ③ forward for a short distance using the thumb.



CAUTION: Magazine spring is under slight tension. Use care when removing magazine floorplate.

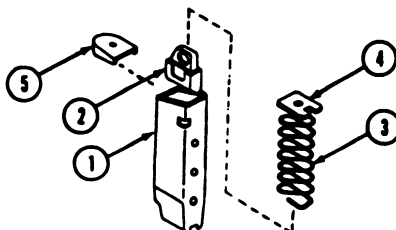
- d. While maintaining the magazine spring pressure with thumb, remove the floorplate ① from the magazine.



3. Remove the floorplate retainer and magazine spring ③ and follower ④ from the floorplate.

- Clean, oil, lubricate:

1. Wipe magazine tube ① and follower ② with a cloth. Then, clean the magazine tube and follower with CLP and a soft brush.
2. With a cloth, wipe the magazine spring ③, floorplate retainer ④, and floorplate ⑤ clean.
3. Apply a light coat of CLP/LSA.



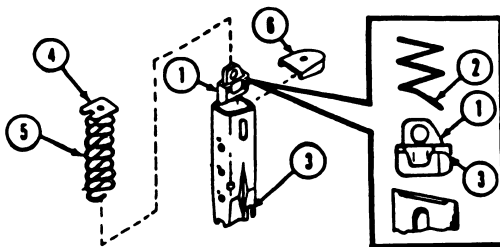
- Reassemble:

1. Insert the follower ① into the top coil ② of the magazine spring. The top coil has an upward and forward pointing end. Ensure that the notches ③ on the follower and magazine tube are on the same side.

2. Insert the magazine spring with the follower into magazine tube.

CAUTION: After insertion, maintain spring tension by using the thumb. Do not place lips of magazine tube on a hard surface during reassembly.

3. Turn the magazine bottom up with the back side against the palm of the hand.
4. Attach and center the floorplate retainer ④ to bottom spring coil.



RESOURCE:

Marine Corps TM 1005A-1011, Pistol, Semiautomatic, 9mm

TASK: ENGAGE TARGET WITH 9mm PISTOL (G-03XX-29.3/Pvt)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: M9 9mm pistol, 2 magazines, holster, magazine pouch, appropriate targets, range and 40 rounds of 9mm ball ammunition.

STANDARD: Obtain the minimum score for qualification with the service pistol.

BATTLE DRILL(S): 16

PERFORMANCE STEPS:

A. Fire the qualification course for record. Refer to MCO 3574.2G.

*USMC M9 SERVICE PISTOL**QUALIFICATION COURSE OF FIRE**40 ROUNDS*

<u>Distance/Technique</u>	<u>Time Limit</u>	<u>Type of Target</u>	<u>Firing Technique</u>
25 Yards, SLOW-FIRE	10 Minutes	E-SA TARGET	All single action
 <u>Ammo per String</u>	 <u>Ammo per Mag</u>	 <u>Firing Position</u>	
ONE 15-Round String	ONE 15-Round Magazine	Weaver Stance	

1. On command, move to the 25-yard firing line.
2. On command, draw pistol from holster and come to "Ready Position."
3. On command, clear and bench pistol.
4. On command, load one magazine with 15 rounds during 3-minute preparation period.
5. On command, pick up pistol, ensure safety is on "SAFE," depress slide catch to move slide forward.
6. On command, insert magazine of 15 rounds in pistol.
7. On command, use "Sling-Shot Method" to chamber one round.
8. On command, ensure safety is on "SAFE," then holster and secure pistol.
9. On command, draw pistol from holster and come to "Ready Position."
10. When targets face, move safety to "FIRE" position, cock the hammer, fire 15 well-aimed rounds single action in a slow-fire cadence, reassuming the "Ready Position" after each shot, within the 10-minute time limit.
11. On your own command, clear and bench the pistol.
12. On your own command, step back from firing line.
13. On command, move to pits to score and paste target.
14. Return to the 25-yard line.
15. On command, load one magazine with five rounds.
16. On command, pick up pistol, ensure safety is on "SAFE," depress slide catch to move slide forward.
17. On command, insert magazine of five rounds in pistol.
18. On command, use "Sling-Shot Method" to chamber one round.
19. On command, ensure safety is on "SAFE," then holster and secure pistol.
20. On your command, take one step back from the firing line.

<u>Distance/Technique</u>	<u>Time Limit</u>	<u>Type of Target</u>	<u>Firing Technique</u>
25 Yds, QUICK-FIRE	4 sec per shot	E-SA TARGET (Hit/Miss)	All double action

<u>Ammo per String</u>	<u>Ammo per Mag</u>	<u>Firing Position</u>
ONE 15-Round String	ONE 15-Round Magazine Per String	Weaver Stance

1. On command, move back up to the 25-yard firing line.
2. On command, draw pistol from holster and come to "Ready Position."
3. When target faces for four seconds, raise pistol to eye level, move safety to "FIRE" position, fire one well-aimed double action shot, move safety to "SAFE" position, lower pistol to the "Ready Position" while target is edged for six seconds.
4. Repeat step 3 four more times.
5. On command, clear and bench the pistol.
6. On command, step back from the firing line.
7. On command, move to pits to score and paste target.
8. Return to the 25-yard line.
9. On command, load two magazines with three rounds each and place one magazine in magazine pouch.
10. On command, pick up pistol, ensure safety is on "SAFE," depress slide catch to move slide forward.
11. On command, insert a magazine of three rounds in pistol.
12. On command, use "Sling-Shot Method" to chamber one round.
13. On command, ensure safety is on "SAFE," then holster and secure pistol.
14. On command, step back from firing line.
15. On command, move to the 15-yard line.

<u>Distance/Technique</u>	<u>Time Limit</u>	<u>Type of Target</u>	<u>Firing Technique</u>
15 Yds, Sustained-Fire	25 sec per string	E-SA TARGET	First shot in each magazine is fired double action

<u>Ammo per String</u>	<u>Ammo per Mag</u>	<u>Firing Position</u>
TWO 6-Round String	TWO 3-Round Magazine Per String	Weaver Stance

1. On command, draw pistol from holster and come to "Ready Position."
2. When target faces for 25 seconds, raise pistol to eye level, move safety to "FIRE" position, fire first round as well-aimed double action shot and next two rounds as single action. Move the safety to the "SAFE" position, drop empty magazine, reload with second magazine of three rounds, depress slide catch to move slide forward, raise pistol to eye level, move safety to "FIRE" position, fire first round of the second magazine as double action and next two rounds as single action.
3. On command, clear and bench the pistol.
4. On command, reload two magazines with three rounds each and place one in magazine pouch.

5. On command, pick up pistol, ensure safety is on "SAFE," depress slide catch to move the slide forward.
6. On command, insert a magazine of three rounds into pistol.
7. On command, use "Sling-Shot Method" to chamber one round, and come to "Ready Position."
8. Repeat step 2 once more.
9. On command, clear and bench the pistol.
10. On command, step back from the firing line.
11. On command, move to the pits to score and paste target.
12. Return to the 15-yard line.
13. On command, load one magazine with eight rounds.
14. On command, pick up pistol, ensure safety is on "SAFE," depress slide to move the slide forward.
15. On command, insert a magazine of eight rounds into pistol.
16. On command, use "Sling-Shot Method" to chamber one round.
17. On command, ensure safety is on "SAFE," then holster and secure pistol.
18. On command, step back from the firing line.
19. On command, move to the 7-yard line.

<u>Distance/Technique</u>	<u>Time Limit</u>	<u>Type of Target</u>	<u>Firing Technique</u>
7 Yds, Quick-Reaction	4 sec per string	E-SA TARGET	First shot in each drill is fired double action

<u>Ammo per String</u>	<u>Ammo per Mag</u>	<u>Firing Position</u>
FOUR 2-Round String	ONE 8-Round Magazine Per String	Weaver Stance

1. On command, draw pistol from holster and come to "Ready Position."
2. When target faces for four seconds, raise pistol to eye level, move safety to "FIRE" position, fire one well-aimed double action shot, then a well-aimed single action shot. Move safety to "SAFE" position, lower pistol to the "Ready Position" while target is edged for a variable time running from a minimum of five seconds to a maximum of 15 seconds.
3. Repeat step 2 three more times with variable target edge times.
4. On command, clear pistol, place empty magazine in magazine pouch, and come to "Ready Position."
5. On commands of range coach, elevate pistol muzzle 90 degrees so coach can verify empty magazine well, then lower muzzle so coach can verify empty chamber and come to "Ready Position."
6. On command, depress slide catch to move slide forward, ensure safety is on "SAFE," then holster and secure pistol.
7. On command, step back from the firing line and move to pits to score and paste target.
8. Return to firing line. Police and secure the range after last relay.

RESOURCES:

MCO 3574.2G, Marksmanship Training with Individual Small Arms
FMFM 1-3, Basic Marksmanship

TASK: TAKE IMMEDIATE ACTION M9, (9mm PISTOL/G-03XX-29.4/Pvt)

CONDITIONS: Conditions are determined by mission requirements. You will be provided: 9mm pistol with two magazines.

STANDARD: You must respond to the malfunction immediately, by using the proper immediate action procedure.

BATTLE DRILL(S): 16

PERFORMANCE STEPS:**A. Select appropriate immediate action.**

WARNING: Always keep the pistol pointed in a safe direction.

IF:
THEN:

Pistol Fails to Fire And the slide is
fully forward

Squeeze the trigger again.

Pistol still does not fire

1. Ensure that the magazine is fully seated.
2. Retract the slide to the rear and release ensuring slide returns fully forward.
3. Squeeze the trigger.

Pistol still does not fire

1. Remove the magazine.
 2. Retract the slide to eject the chambered cartridge.
 3. Insert a new magazine.
 4. Retract the slide and release to chamber another cartridge.
 5. Squeeze the trigger.
-

IF:	THEN:
Pistol Fails to Fire	And the slide is NOT fully forward 1. Remove finger from the trigger. With the other hand, attempt to push the slide fully forward. 2. Squeeze the trigger.
Slide will still not move forward	1. Place the safety in a safe position. 2. Remove magazine. 3. Grasp the slide and retract to the rear, locking it with the slide stop. 4. Inspect the chamber and remove any obstructions. 5. Insert another loaded magazine into pistol. 6. Release slide, chambering round. 7. Place safety in fire position. 8. Squeeze the trigger.

B. Simulate continuing to fire.

RESOURCE:

Marine Corps TM 1005A-1011, Pistol, Semiautomatic, 9mm

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